भारतीय गैर न्यायिक

भारत INDIA

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FIVE HUNDRED RUPEES

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Rs. 500

INDIA NON JUDICIAL

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AGREEMENT

This Agreement is made on the 17th day of the month of **March, 2010**, between, on the one hand, **The President of India acting through Director General, Unique Identification Authority of India, Planning Commission, Government of India, (hereinafter called the "Employer")** and, on the other hand, consortium consisting of the following entities, each of which will be jointly and severally liable to the Employer for all the Consultant's obligations under this Contract, namely, **M/s Ernst & Young Private Limited and M/s Netmagic Solutions Pvt Ltd.** having lead partner as the Ernst & young pvt ltd (hereinafter called the "Consultant").

WHEREAS

(a) the Employer has requested the Consultant to provide certain consulting services as defined in this Contract (hereinafter called the "Services");

(b) the Consultant, having represented to the Employer that it has the required professional skills, and personnel and technical resources, has agreed to provide the Services on the terms and conditions set forth in this Contract;

NOW THEREFORE the parties hereto hereby agree as follows:

1. The following documents attached hereto shall be deemed to form an integral part of this Contract:

   (a) The General Conditions of Contract;

   (b) The Special Conditions of Contract,

   (c) The following Appendices:
      - i. Appendix A: Description of Services
         - a. Part A : Description of Services
         - b. Part B : Clarifications of RFP dated 04-Jan-2010 related to RFP
         - c. Part C: Description of Approach and Methodology
      - Appendix B: Reporting Requirements
      - Appendix C: Staffing Schedule
      - Appendix D: Total Cost of Services

2.8

NO.
NAME Mr. B.B. Nanawati
FATHER'S NAME Deputy Director General
ADDRESS UIDAI, Jeevan Bharti Bldg
Tower 1, Parliament Stre
PURPOSE New Delhi

16 MAR 2010

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NEW DELHI

v. Appendix E: Duties of the Employer
vi. Appendix F. Teaming agreements with the Consortium Partner/Individual Experts

(d) RFP for UID CIDR Consultant issued by the Employer

(e) Pre-qualification, Technical and Commercial proposals submitted by the Consultant

2. The mutual rights and obligations of the Employer and the Consultant shall be as set forth in the Contract, in particular:

(a) the Consultants shall carry out the Services in accordance with the provisions of the Contract; and

(b) the Employer shall make payments to the Consultants in accordance with the provisions of the Contract.

IN WITNESS WHEREOF, the Parties hereto have caused this Agreement to be signed in their respective names as of the day and year first above written.

Signed, Sealed and Delivered for & on behalf of M/s Ernst & Young Pvt. Ltd

Signed
Name : Sunil Chandiramani
Designation : Partner & National Director
Date : 17th March 2010
Place : New Delhi

Signed, Sealed and Delivered for and on behalf of the President of India

Signed
Name : (B.B. Manawat)
Designation : Dy. D.G. UIDAI
Date : 17th March, 2010
Place : **New Delhi**

Signed, Sealed and Delivered for & on behalf of M/s Netmagic Solutions Pvt. Ltd.

Signed
Name :
Designation :
Date :
Place : **New Delhi**

in the presence of :

Signed
Name : Guru Malladi
Designation : Partner, Ernst & young.
Date : 17 March' 10
Place : **New Delhi**

in the presence of :

Signed
Name : D.K. Chhablani
Designation : ADG, UIDAI
Date :
Place : **New Delhi**

II. General Conditions of Contract

1. GENERAL PROVISIONS

1.1 Definitions

Unless the context otherwise requires, the following terms whenever used in this Contract have the following meanings:

(a) "Applicable Law" means the laws and any other instruments having the force of law in the Government's country, or in such other country as may be specified in the Special Conditions of Contract (SC), as they may be issued and in force from time to time.

(b) "Consultant" means any private or public entity that will provide the Services to the Employer under the Contract.

(c) "Contract" means the Contract signed by the Parties and all the attached documents listed in its Clause 1, that is these General Conditions (GC), the Special Conditions (SC), and the Appendices.

(d) "Contract Price" means the price to be paid for the performance of the Services, in accordance with Clause 6;

(e) "Effective Date" means the date on which this Contract comes into force and effect pursuant to Clause GC 2.1.

(f) "Foreign Currency" means any currency other than the currency of the Employer's country.

(g) "GC" means these General Conditions of Contract.

(h) "Government" means the Government of the Employer's country.

(i) "Local Currency" means the currency of the Employer's country.

(j) "Bidder" means the Consultant firm bidding for this consultancy assignment

(k) "Member" means any of the entities that make up the consortium, and "Members" means all these entities.

(l) "Party" means the Employer or the Consultant, as the case may be, and "Parties" means both of them.

(m) "Personnel" means persons hired by the Consultant or by any Sub-Consultants and assigned to the performance of the Services or any part thereof.

(n) "SC" means the Special Conditions of Contract by which the GC may be amended or supplemented.

(o) "Services" means the work to be performed by the Consultant pursuant to this Contract, as described in Appendix A

	hereto. (p) "Sub-Consultants" means any person or entity to whom/which the Consultant subcontracts any part of the Services. (q) "In writing" means communicated in written form with proof of receipt. (r) "CIDR" means the complete UID application software, IT infrastructure, data center as well as the disaster recovery center facilities. (s) "IT Systems" means all application software, middleware, system software, database, servers, networking, security, storage, etc.
1.2 Relationship Between the Parties	Nothing contained herein shall be construed as establishing a relationship of master and servant or of principal and agent as between the "Employer" and the Consultant. The Consultant, subject to this Contract, has complete charge of Personnel and Sub-Consultants, if any, performing the Services and shall be fully responsible for the Services performed by them or on their behalf hereunder.
1.3 Law Governing Contract	This Contract, its meaning and interpretation, and the relation between the Parties shall be governed by the Applicable Laws of India.
1.4 Language	This Contract has been executed in English, which shall be the binding and controlling language for all matters relating to the meaning or interpretation of this Contract.
1.5 Notices	
1.5.1	Any notice, request or consent required or permitted to be given or made pursuant to this Contract shall be in writing. Any such notice, request or consent shall be deemed to have been given or made when delivered in person to an authorized representative of the Party to whom the communication is addressed, or when sent to such Party at the address specified in the SC.
1.5.2	A Party may change its address for notice hereunder by giving the other Party notice in writing of such change to the address specified in the SC.
1.6 Location	The Services shall be performed at such locations as are specified in Appendix A hereto and, where the location of a particular task is not so specified, at such locations, as the Employer may approve.
1.7 Authority of Lead	In case the Consultant consists of a consortium of more than one entity, the Members hereby authorize the entity specified (Lead Partner) in the SC to act on their behalf in exercising all the Consultant's rights and

Partner	obligations towards the Employer under this Contract, including without limitation the receiving of instructions and payments from the Employer. However, each member or constituent of Consortium of Consultants shall be jointly and severally liable for all obligations of the consultant under the Contract.
1.8 Authorized Representatives	Any action required or permitted to be taken, and any document required or permitted to be executed under this Contract by the Employer or the Consultant may be taken or executed by the officials specified in the SC.
1.9 Taxes and Duties	The Consultant, Sub-Consultants, and their Personnel shall pay such indirect taxes, duties, fees, and other impositions levied under the Applicable Laws of India
1.10 Fraud and Corruption	
1.10.1 Definitions	It is the Employer's policy to require that the Employer as well as Consultants observe the highest standard of ethics during the selection and execution of such contracts. In pursuance of this policy, the Employer: (a) defines, for the purpose of this provision, the terms set forth below as follows: (i) "corrupt practice" means the offering, receiving, or soliciting, directly or indirectly, of any thing of value to influence the action of a public official in the selection process or in contract execution; (ii) "fraudulent practice" means a misrepresentation or omission of facts in order to influence a selection process or the execution of a contract; (iii) "collusive practices" means a scheme or arrangement between two or more consultants, with or without the knowledge of the Employer, designed to establish prices at artificial, noncompetitive levels; (iv) "coercive practices" means harming or threatening to harm, directly or indirectly, persons or their property to influence their participation in a procurement process, or affect the execution of a contract;
1.10.2 Measures to be taken by the Employer	(a) The Employer may terminate the contract if it determines at any time that representatives of the consultant were engaged in corrupt, fraudulent, collusive or coercive practices during the selection process or the execution of that contract, without the consultant having taken timely and appropriate action satisfactory to the

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	Employer to remedy the situation; (b) The Employer may also sanction against the Consultant, including declaring the Consultant ineligible, either indefinitely or for a stated period of time, to be awarded a contract if it at any time determines that the Consultant has, directly or through an agent, engaged in corrupt, fraudulent, collusive or coercive practices in competing for, or in executing, a Employer-financed contract
1.10.3 Commissions and Fees	c) Employer will require the successful Consultant to disclose any commissions or fees that may have been paid or are to be paid to agents, representatives, or commission agents with respect to the selection process or execution of the contract. The information disclosed must include at least the name and address of the agent, representative, or commission agent, the amount and currency, and the purpose of the commission or fee.

2. COMMENCEMENT, COMPLETION, MODIFICATION AND TERMINATION OF CONTRACT

2.1 Effectiveness of Contract	This Contract shall come into effect on the date the Contract is signed by both Parties or such other later date as may be stated in the SC. The date the Contract comes into effect is defined as the Effective Date.
2.2 Termination of Contract for Failure to Become Effective	If this Contract has not become effective within such time period after the date of the Contract signed by the Parties as specified in the SC, either Party may, by not less than twenty one (21) days written notice to the other Party, declare this Contract to be null and void, and in the event of such a declaration by either Party, neither Party shall have any claim against the other Party with respect hereto.
2.3 Commencement of Services	The Consultant shall begin carrying out the Services not later than the number of days after the Effective Date specified in the SC.
2.4 Expiration of Contract	Unless terminated earlier pursuant to Clause GC 2.3 hereof, this Contract shall expire at the end of such time period after the Effective Date as specified in the SC.
2.5 Entire Agreement	This Contract contains all covenants, stipulations and provisions agreed by the Parties. No agent or representative of either Party has authority to make, and the Parties shall not be bound by or be liable for, any other statement, representation, promise or agreement not set forth herein.

2.6 Modifications or Variations	a) Any modification or variation of the terms and conditions of this Contract, including any modification or variation of the scope of the Services, may only be made by written agreement between the Parties. However, each Party shall give due consideration to any proposals for modification or variation made by the other Party. (b) In cases of substantial modifications or variations, the prior written consent of the Employer is required.
2.7 Force Majeure	
2.7.1 Definition	a) For the purposes of this Contract, "Force Majeure" means an event which is beyond the reasonable control of a Party, is not foreseeable, is unavoidable and not brought about by or at the instance of the Party claiming to be affected by such events and which has caused the non-performance or delay in performance, and which makes a Party's performance of its obligations hereunder impossible or so impractical as reasonably to be considered impossible in the circumstances, and includes, but is not limited to, war, riots, civil disorder, earthquake, fire, explosion, storm, flood or other extreme adverse weather conditions, strikes, lockouts or other industrial action (except where such strikes, lockouts or other industrial action are within the power of the Party invoking Force Majeure to prevent), confiscation or any other action by Government agencies. (b) Force Majeure shall not include (i) any event which is caused by the negligence or intentional action of a Party or by or of such Party's Sub-Consultants or agents or employees, nor (ii) any event which a diligent Party could reasonably have been expected both to take into account at the time of the conclusion of this Contract, and avoid or overcome in the carrying out of its obligations hereunder. (c) Force Majeure shall not include insufficiency of funds or inability to make any payment required hereunder.
2.7.2 No Breach of Contract	The failure of a Party to fulfill any of its obligations under the contract shall not be considered to be a breach of, or default under, this Contract insofar as such inability arises from an event of Force Majeure, provided that the Party affected by such an event (a) has taken all reasonable precautions, due care and reasonable alternative measures in order to carry out the terms and conditions of this Contract, and (b) has informed the other Party as soon as possible about the occurrence of such an event.
2.7.3 Measures to be Taken	(a) A Party affected by an event of Force Majeure shall continue to perform its obligations under the Contract as far as is reasonably practical, and shall take all reasonable measures to minimize the consequences of any event of Force Majeure. (b) A Party affected by an event of Force Majeure shall notify the other Party of such event as soon as possible, and in any case not

later than fourteen (14) days following the occurrence of such event, providing evidence of the nature and cause of such event, and shall similarly give written notice of the restoration of normal conditions as soon as possible.

(c) Any period within which a Party shall, pursuant to this Contract, complete any action or task, shall be extended for a period equal to the time during which such Party was unable to perform such action as a result of Force Majeure.

(d) During the period of their inability to perform the Services as a result of an event of Force Majeure, the Consultant, upon instructions by the "Employer", shall either:

(i) Demobilize,; or

(ii) Continue with the Services to the extent possible, in which case the Consultant shall continue to be paid proportionately and on prorata basis, under the terms of this Contract.

(e) In the case of disagreement between the Parties as to the existence or extent of Force Majeure, the matter shall be settled according to Clause GC 8.

2.8 Suspension

The "Employer" may, by written notice of suspension to the Consultant, suspend all payments to the Consultant hereunder if the Consultant fails to perform any of its obligations under this Contract, including the carrying out of the Services, provided that such notice of suspension (i) shall specify the nature of the failure. and (ii) shall allow the Consultant to remedy such failure, if capable of being remedied, within a period not exceeding thirty (30) days after receipt by the Consultant of such notice of suspension.

2.9 Termination

2.9.1 By the Employer

The Employer may terminate this Contract in case of the occurrence of any of the events specified in paragraphs (a) through (j) of this Clause GC 2.9.1. In such an occurrence the Employer shall give a not less than thirty (30) days' written notice of termination to the Consultant, and sixty (60) days' in the case of the event referred to in (e).

(a) If the Consultant does not remedy a failure in the performance of their obligations under the Contract, within thirty (30) days after being notified or within any further period as the Employer may have subsequently approved in writing.

(b) If the Consultant becomes (or, if the Consultant consists of more than one entity, if any of its Members becomes and which has substantial bearing on providing Services under this contract) insolvent or go into liquidation or receivership whether compulsory or voluntary.

(c) If the Consultant, in the judgment of the Employer has engaged in corrupt or fraudulent practices in competing for or in executing the Contract.

(d) If, as the result of Force Majeure, the Consultant are unable to perform a material portion of the Services for a period of not less than sixty (60) days.

(e) If the Employer, in its sole discretion and for any reason whatsoever, decides to terminate this Contract.

(f) If the Consultant submits to the "Employer" a false statement which has a material effect on the rights, obligations or interests of the "Employer".

(g) If the Consultant places itself in position of conflict of interest or fails to disclose promptly any conflict of interest to the Employer.

(h) If the consultant fails to provide the quality services as envisaged under this Contract. The Consultancy Monitoring Committee (CMC) formulated to monitor the progress of the assignment may make judgment regarding the poor quality of services, the reasons for which shall be recorded in writing. The CMC may decide to give one chance to the consultant to improve the quality of the services.

(i) If the Consultant fails to comply with any final decision reached as a result of arbitration proceedings pursuant to Clause GC 8 hereof.

(j) Employer reserves the right to terminate the agreement with the selected consultant or reduce the project cost at any stage of the project if the personnel proposed to be deployed full-time on this engagement are not actually working on this assignment on a full-time basis as proposed by Consultant

2.9.2 By the Consultant

The Consultants may terminate this Contract, by not less than thirty (30) days' written notice to the Employer, such notice to be given after the occurrence of any of the events specified in paragraphs (a) through (d) of this Clause GC 2.9.2:

(a) If the Employer fails to pay any money due to the Consultant pursuant to this Contract and not subject to dispute pursuant to Clause GC 8 hereof within forty-five (45) days after receiving written notice from the Consultant that such payment is overdue.

(b) If, as the result of Force Majeure, the Consultant is unable to perform a material portion of the Services for a period of not

	less than sixty (60) days. (c) If the Employer fails to comply with any final decision reached as a result of arbitration pursuant to Clause GC 8 hereof. (d) If the "Employer" is in material breach of its obligations pursuant to this Contract and has not remedied the same within forty-five (45) days (or such longer period as the Consultant may have subsequently approved in writing) following the receipt by the "Employer" of the Consultant's notice specifying such breach.
2.9.3 Cessation of Rights and Obligations	Upon termination of this Contract pursuant to Clauses GC 2.2 or GC 2.9 hereof, or upon expiration of this Contract pursuant to Clause GC 2.4 hereof, all rights and obligations of the Parties hereunder shall cease, except (i) such rights and obligations as may have accrued on the date of termination or expiration, (ii) the obligation of confidentiality set forth in Clause GC 3.3 hereof, (iii) the Consultant's obligation to permit inspection, copying and auditing of their accounts and records set forth in Clause GC 3.6 hereof, and (iv) any right which a Party may have under the Law.
2.9.4 Cessation of Services	Upon termination of this Contract by notice of either Party to the other pursuant to Clauses GC 2.9.1 or GC 2.9.2 hereof, the Consultant shall, immediately upon dispatch or receipt of such notice, take all necessary steps to bring the Services to a close in a prompt and orderly manner and shall make every reasonable effort to keep expenditures for this purpose to a minimum. With respect to documents prepared by the Consultant and equipment and materials furnished by the "Employer", the Consultant shall proceed as provided, respectively, by Clauses GC 3.9 or GC 3.10 hereof.
2.9.5 Payment upon Termination	Upon termination of this Contract pursuant to Clauses GC 2.9.1 or GC 2.9.2, the Employer shall make the following payments to the Consultant: (a) If the Contract is terminated pursuant to Clause 2.9.1 (d), (e), (g), (h) or 2.9.2, remuneration pursuant to Clause GC 6.3(h), (i) hereof for Services satisfactorily performed prior to the effective date of termination, and reimbursable expenditures pursuant to Clause GC 6.3(h)(ii) hereof for expenditures actually and reasonably incurred prior to the effective date of termination; (b) If the agreement is terminated pursuant of Clause 2.9.1 (a) to (c) and (f) to (i), the consultant shall not be entitled to receive any agreed payments upon termination of the contract. However, the "Employer" may consider to make payment for the part satisfactorily performed on the basis of Quantum Merint as assessed by it, if such part is of economic utility to the Employer. Applicable Under such circumstances, upon termination, the Employer may also impose liquidated

	damages as per the provisions of Clause 9 of this agreement. The consultant will be required to pay any such liquidated damages to Employer within 30 days of termination date.
2.9.6 Disputes about Events of Termination:	If either Party disputes whether an event specified in paragraphs (a) through (g) of Clause GC 2.9.1 or in Clause GC 2.9.2 hereof has occurred, such Party may, within forty-five (30) days after receipt of notice of termination from the other Party, refer the matter to Clause GC 8 hereof, and this Contract shall not be terminated on account of such event except in accordance with the terms of any resulting arbitral award.
2.10 Extension of Contract	The contract shall be extended for a period as required by the Employer based on mutual agreement. The man-month rates used for the calculation of the 'Total Cost of Services' as given in Appendix D shall be effective for such extension.

3. OBLIGATIONS OF THE CONSULTANT

3.1 General	
3.1.1 Standard of Performance	The Consultant shall perform the Services and carry out their obligations hereunder with all due diligence, efficiency and economy, in accordance with generally accepted professional standards and practices, and shall observe sound management practices, and employ appropriate technology and safe and effective equipment, machinery, materials and methods. The Consultant shall always act, in respect of any matter relating to this Contract or to the Services, as faithful advisers to the Employer, and shall at all times support and safeguard the Employer's legitimate interests in any dealings with Sub-Consultants or third Parties.
3.2 Conflict of Interests	The Consultant shall hold the Employer's interests paramount, without any consideration for future work, and strictly avoid conflict with other assignments or their own corporate interests. If during the period of this contract, a conflict of interest arises for any reasons, the Consultant shall promptly disclose the same to the Employer and seek its instructions.
3.2.1 Consultants Not to Benefit from Commissions, Discounts, etc.	a) The payment of the Consultant pursuant to Clause GC 6 shall constitute the Consultant's only payment in connection with this Contract or the Services, and the Consultant shall not accept for their own benefit any trade commission, discount, or similar payment in connection with activities pursuant to this Contract or to the Services or in the discharge of their obligations under the Contract, and the Consultant shall use their best efforts to ensure that the Personnel, any Sub-Consultants, and agents of either of them similarly shall not receive any such additional payment. (b) Furthermore, if the Consultant, as part of the Services, has the responsibility of advising the "Employer" on the procurement of goods, works or services, the Consultant shall comply with the

	Employer's applicable procurement guidelines, and shall at all times exercise such responsibility in the best interest of the "Employer". Any discounts or commissions obtained by the Consultant in the exercise of such procurement responsibility shall be for the account of the "Employer".
3.2.2 Consultant and Affiliates Not to be Otherwise Interested in Project	The Consultant agrees that, during the term of this Contract and after its termination, the Consultant and any entity affiliated with the Consultant, as well as any Sub-Consultants and any entity affiliated with such Sub-Consultants, shall be disqualified from providing goods, works or services (other than consulting services) resulting from or directly related to the Consultant's Services for the preparation or implementation of the project.
3.2.3 Prohibition of Conflicting Activities	The Consultant shall not engage, and shall cause their Personnel as well as their Sub-Consultants and their Personnel not to engage, either directly or indirectly, in any business or professional activities which would conflict with the activities assigned to them under this Contract.
3.3 Confidentiality	Except with the prior written consent of the Employer, the Consultant and the Personnel shall not at any time communicate to any person or entity any confidential information acquired in the course of the Services, nor shall the Consultant and the Personnel make public the recommendations formulated in the course of, or as a result of, the Services.
3.4 Insurance to be Taken Out by the Consultant	The Consultant (a) shall take out and maintain, and shall cause any Sub-Consultants to take out and maintain, at their (or the Sub-Consultants', as the case may be) own cost but on terms and conditions approved by the Employer, insurance against the risks, and for the coverage, as shall be specified in the SC; and (b) at the Employer's request, shall provide evidence to the Employer showing that such insurance has been taken out and maintained and that the current premiums have been paid.
3.5 Accounting, Inspection and Auditing:	The Consultant (i) shall keep accurate and systematic accounts and records in respect of the Services hereunder, in accordance with internationally accepted accounting principles and in such form and detail as will clearly identify all relevant time changes and costs, and the bases thereof, and (ii) shall periodically permit the "Employer" or its designated representative and/or the Employer, and up to five years from expiration or termination of this Contract, to inspect the same and make copies thereof as well as to have them audited by auditors appointed by the "Employer" or the Employer, if so required by the "Employer" or the Employer as the case may be.
3.6 Consultant's Actions Requiring Employer's	The Consultant shall obtain the Employer's prior approval in writing before taking any of the following actions: (a) Any change or addition to the Personnel listed in Appendix C. (b) Subcontracts: the Consultant may subcontract work relating to the Services to an extent and with such experts and entities as may be approved in advance by the "Employer". Notwithstanding such

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Prior Approval	approval, the Consultant shall always retain full responsibility for the Services. In the event that any Sub-Consultants are found by the "Employer" to be incompetent or incapable or undesirable in discharging assigned duties, the "Employer" may request the Consultant to provide a replacement, with qualifications and experience acceptable to the "Employer", or to resume the performance of the Services itself.
3.7 Reporting Obligations	(a) The Consultant shall submit to the Employer the reports and documents specified in Appendix B hereto, in the form, in the numbers and within the time periods set forth in the said Appendix. (b) Final reports shall be delivered in CD ROM in addition to the hard copies specified in said Appendix.
3.8 Documents Prepared by the Consultant to be the Property of the Employer	(a) All plans, drawings, specifications, designs, reports, other documents and software submitted by the Consultant under this Contract shall become and remain the property of the Employer, and the Consultant shall, not later than upon termination or expiration of this Contract, deliver all such documents to the Employer, together with a detailed inventory thereof. (b) The Consultant may retain a copy of such documents, but shall not use anywhere, without taking permission, in writing, from the Employer and the Employer reserves right to grant or deny any such request.. If license agreements are necessary or appropriate between the Consultant and third parties for purposes of development of any such computer programs, the Consultant shall obtain the "Employer"'s prior written approval to such agreements, and the "Employer" shall be entitled at its discretion to require recovering the expenses related to the development of the program(s) concerned.
3.9 Equipment, Vehicles and Materials Furnished by the "Employer"	Equipment, vehicles and materials made available to the Consultant by the "Employer", or purchased by the Consultant wholly or partly with funds provided by the "Employer", shall be the property of the "Employer" and shall be marked accordingly. Upon termination or expiration of this Contract, the Consultant shall make available to the "Employer" an inventory of such equipment, vehicles and materials and shall dispose of such equipment and materials in accordance with the "Employer"'s instructions. While in possession of such equipment, vehicles and materials, the Consultant, unless otherwise instructed by the "Employer" in writing, shall insure them at the expense of the "Employer" in an amount equal to their full replacement value.
3.10 Equipment and Materials Provided by the	Equipment or materials brought into the Government's country by the Consultant and the Personnel and used either for the Project or personal use shall remain the property of the Consultant or the Personnel concerned, as applicable.

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Consultants	

4. CONSULTANT'S PERSONNEL

4.1 General	The Consultant shall employ and provide such qualified and experienced Personnel and Sub-Consultants as are required to carry out the Services.
4.2 Description of Personnel	(a) The title, agreed job description, minimum qualification and estimated period of engagement in the carrying out of the Services of each of the Consultant's Key Personnel are as per the consultant's proposal and are described in Appendix C. If any of the Key Personnel has already been approved by the "Employer", his/her name is listed as well. (b) If required to comply with the provisions of Clause GC 3.1.1 hereof, adjustments with respect to the estimated periods of engagement of Key Personnel set forth in Appendix C may be made by the Consultant by written notice to the "Employer", provided (i) that such adjustments shall not alter the originally estimated period of engagement of any individual by more than 10% or one week, whichever is larger, and (ii) that the aggregate of such adjustments shall not cause payments under this Contract to exceed the ceilings set forth in Clause GC 6.1(b) of this Contract. Any other such adjustments shall only be made with the "Employer"'s written approval. (c) If additional work is required beyond the scope of the Services specified in Appendix A, the estimated periods of engagement of Key Personnel set forth in Appendix C may be increased by agreement in writing between the "Employer" and the Consultant. In case where payments under this Contract exceed the ceilings set forth in Clause GC 6.1(b) of this Contract, this will be explicitly mentioned in the agreement.
4.3 Approval of Personnel	The Key Personuel and Sub-Consultants listed by title as well as by name in Appendix C are hereby approved by the "Employer". In respect of other Personnel which the Consultant proposes to use in the carrying out of the Services, the Consultant shall submit to the "Employer" for review and approval a copy of their Curricula Vitae (CVs). If the "Employer" does not object in writing (stating the reasons for the objection) within twenty-one (21) days from the date of receipt of such CVs, such Personnel shall be deemed to have been approved by the "Employer".
4.4 Removal and/or Replacement	(a) Except as the Employer may otherwise agree, no changes shall be made in the Key Personnel. If, for any reason beyond the reasonable control of the Consultant, such as retirement, death, medical incapacity, among others, it becomes necessary to replace any of the Key Personnel, the Consultant shall provide as

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of Personnel	a replacement a person of equivalent or better qualifications. (b) If the Employer finds that any of the Personnel have (i) committed serious misconduct or have been charged with having committed a criminal action, or (ii) have reasonable cause to be dissatisfied with the performance of any of the Personnel, then the Consultant shall, at the Employer's written request specifying the grounds thereof, provide as a replacement a person with qualifications and experience acceptable to the Employer. (c) Any of the Personnel provided as a replacement under Clauses (a) and (b) above, as well as any reimbursable expenditures (including expenditures due to the number of eligible dependents) the Consultants may wish to claim as a result of such replacement, shall be subject to the prior written approval by the "Employer". The rate of remuneration applicable to a replacement person will be the rate of remuneration paid to the replacement person. Also (i) the Consultant shall bear all additional travel and other costs arising out of or incidental to any removal and/or replacement, and (ii) the remuneration to be paid for any of the Personnel provided as a replacement shall not exceed the remuneration which would have been payable to the Personnel replaced.
4.5 Resident Project Manager	If required by the SC, the Consultant shall ensure that at all times during the Consultant's performance of the Services a resident project manager, acceptable to the "Employer", shall take charge of the performance of such Services.

5. OBLIGATIONS OF THE EMPLOYER

5.1 Assistance and Exemptions	Unless otherwise specified in the SC, the "Employer" shall use its best efforts to ensure that the Government shall: (a) Provide the Consultant, Sub-Consultants and Personnel with work permits and such other documents as shall be necessary to enable the Consultant, Sub-Consultants or Personnel to perform the Services. (b) Arrange for the Foreign Personnel to be provided promptly with all necessary entry and exit visas, residence permits, exchange permits and any other documents required for their stay in India. (c) Issue to officials, agents and representatives of the Government all such instructions as may be necessary or appropriate for the prompt and effective implementation of the Services. (d) Provide to the Consultant, Sub-Consultants and Personnel any such other assistance as may be specified in the SC.

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5.2 Change in the Applicable Law Related to Taxes and Duties	If, after the date of this Contract, there is any change in the Applicable Laws of India with respect to taxes and duties, which are directly payable by the consultant for providing the services i.e. service tax or any such applicable tax from time to time, which increases or decreases the cost incurred by the Consultant in performing the Services, then the remuneration and reimbursable expenses otherwise payable to the Consultant under this Contract shall be increased or decreased accordingly by agreement between the Parties hereto, and corresponding adjustments shall be made to the ceiling amounts specified in Clause GC 6.1(b).
5.3 Services, Facilities and Property of the "Employer"	(a) The "Employer" shall make available to the Consultant and its Personnel, for the purposes of the Services and free of any charge, the services, facilities and property described in Appendix E at the times and in the manner specified in said Appendix E. (b) In case that such services, facilities and property shall not be made available to the Consultant as and when specified in Appendix E, the Parties shall agree on any time extension that it may be appropriate to grant to the Consultant for the performance of the Services .
5.4 Payment	In consideration of the Services performed by Consultant under this Contract, the "Employer" shall make to the Consultant such payments and in such manner as is provided by Clause GC 6 of this Contract.
5.5 Counterpart Personnel	(a) If necessary, the "Employer" shall make available to the Consultant free of charge such professional and support counterpart personnel, to be nominated by the "Employer" with the Consultant's advice, if specified in Appendix E. (b) Professional and support counterpart personnel, excluding "Employer"'s liaison personnel, shall work under the exclusive direction of the Consultant. If any member of the counterpart personnel fails to perform adequately any work assigned to such member by the Consultant that is consistent with the position occupied by such member, the Consultant may request the replacement of such member, and the "Employer" shall not unreasonably refuse to act upon such request.

6. PAYMENTS TO THE CONSULTANT

6.1 Total Cost of Services	(a) The total cost of the Services payable is set forth in Appendix D as per the consultant's proposal to the Employer and as negotiated thereafter. (b) Except as may be otherwise agreed under Clause GC 2.6 and subject to Clause GC- 6.1(c), payments under this Contract shall not exceed the amount specified in Appendix-D.

	(c) Notwithstanding Clause GC 6.1(b) hereof, if pursuant to any of the Clauses GC 4.2 (c) or 5.2 hereof, the Parties shall agree that additional payments shall be made to the Consultant in order to cover any necessary additional expenditures not envisaged in the cost estimates referred to in Clause GC 6.1(a) above, the ceiling or ceilings, as the case may be, set forth in Clause GC 6.1(b) above shall be increased by the amount or amounts, as the case may be, of any such additional payments.
6.2 Currency of Payment	All payments shall be made in Indian Rupees.[In case the payment is to be made in the currency other that Indian Rupees, the same shall be mentioned in stead of Indian Rupees]
6.3 Terms of Payment	The payments in respect of the Services shall be made as follows: (a) The consultant shall submit the invoice for payment when the payment is due as per the agreed terms. The payment shall be released as per the work related milestones achieved and as per the specified percentage as per SC. (b) Once a milestone is completed, the consultant shall submit the requisite deliverables as specified in this Contract. The Employer shall release the requisite payment upon acceptance of the deliverables. However, if the Employer fails to intimate acceptance of the deliverables or its objections thereto, within 30 days of receipt of it, the Employer shall release 75% of the payment for the respective deliverable without further delay (maximum 30 days) and the consultant shall produce a Bank Guarantee for the same. The remaining 25% of the payment for the respective deliverable shall be paid on acceptance of the deliverable by the Employer. The Bank Guarantee shall be released when the Unique Identification Authority of India accepts the respective deliverable. (c) Final Payment: The final payment as specified in SC shall be made only after the final report and a final statement, identified as such, shall have been submitted by the Consultant and approved as satisfactory by the "Employer". The Services shall be deemed completed and finally accepted by the "Employer" and the final report and final statement shall be deemed approved by the "Employer" as satisfactory ninety (90) calendar days after receipt of the final report and final statement by the "Employer" unless the "Employer", within such ninety (90) day period, gives written notice to the Consultant specifying in detail deficiencies in the Services, the final report or final statement. The Consultant shall thereupon promptly make any necessary corrections, and thereafter the foregoing process shall be repeated. Any amount, which the "Employer" has paid or caused to be paid in accordance with this Clause in excess of the amounts actually payable in accordance with the provisions of this

Contract, shall be reimbursed by the Consultant to the "Employer" within thirty (30) days after receipt by the Consultant of notice thereof. Any such claim by the "Employer" for reimbursement must be made within twelve (12) calendar months after receipt by the "Employer" of a final report and a final statement approved by the "Employer" in accordance with the above.

(d) For the purpose of payment under Clause 6.3 (b) above, acceptance means; acceptance of the deliverables by the Employer after submission by the consultant and the consultant has made presentation to the CMC / Employer (Mention this if presentation is required) with / without modifications to be communicated in writing by the Employer to the consultant.

(e) If the deliverables submitted by the consultant are not acceptable to the Employer / CMC, reasons for such non-acceptance should be recorded in writing; the Employer shall not release the payment due to the consultant. This is without prejudicing the Employer's right to levy any liquidated damages under clause 9. In such case, the payment will be released to the consultant only after it re-submits the deliverable and which is accepted by the Employer.

(f) All payments under this Contract shall be made to the accounts of the Consultant specified in the SC.

(g) With the exception of the final payment under (c) above, payments do not constitute acceptance of the Services nor relieve the Consultant of any obligations hereunder, unless the acceptance has been communicated by the Employer to the consultant in writing and the consultant has made necessary changes as per the comments / suggestions of the Employer communicated to the Consultant.

(h) In case of early termination of the contract, the payment shall be made to the consultant as mentioned here with:

(i) Assessment should be made about work done from the previous milestone, for which the payment is made or to be made till the date of the termination. The consultant shall provide the details of persons reasonably worked during this period with supporting documents. Based on such details, the remuneration shall be calculated based on the man month rate as specified.

(ii) A reasonable assessment of the reimbursable and miscellaneous expenses shall be made based on details furnished by the consultant in this regard with supporting documents and based on the assessment of the work done and the respective rates as provided. Wherever such an

	assessment is difficult, the rates should be arrived at by calculating the amount on pro-rata basis. The total amount payable shall be the amount calculated as per (i) and (ii) above plus any applicable tax.

7. GOOD FAITH

7.1 Good Faith	The Parties undertake to act in good faith with respect to each other's rights under this Contract and to adopt all reasonable measures to ensure the realization of the objectives of this Contract.
7.2 Operation of the Contract	The Parties recognize that it is impractical in this Contract to provide for every contingency which may arise during the life of the Contract, and the Parties hereby agree that it is their intention that this Contract shall operate fairly as between them, and without detriment to the interest of either of them, and that, if during the term of this Contract either Party believes that this Contract is operating unfairly, the Parties will use their best efforts to agree on such action as may be necessary to remove the cause or causes of such unfairness, but no failure to agree on any action pursuant to this Clause shall give rise to a dispute subject to arbitration in accordance with Clause GC 8 hereof.

8. SETTLEMENT OF DISPUTES

8.1 Amicable Settlement	Performance of the contract is governed by the terms & conditions of the contract, in case of dispute arises between the parties regarding any matter under the contract, either Party of the contract may send a written Notice of Dispute to the other party. The Party receiving the Notice of Dispute will consider the Notice and respond to it in writing within 30 days after receipt. If that party fails to respond within 30 days, or the dispute cannot be amicably settled within 60 days following the response of that party, clause GC 8.2 shall become applicable.
8.2 Arbitration	(a) In the case of dispute arising upon or in relation to or in connection with the contract between the Employer and the Consultant, which has not been settled amicably, any party can refer the dispute for Arbitration under (Indian) Arbitration and Conciliation Act, 1996. Such disputes shall be referred to an Arbitral Tribunal consisting of 3 (three) arbitrators, one each to be appointed by the Employer and the Consultant, the third arbitrator shall be chosen by the two arbitrators so appointed by the parties and shall act as Presiding Arbitrator. In case of failure of the two arbitrators, appointed by the parties to reach a consensus regarding the appointment of the third arbitrator within a period of 30 days from the date of appointment of the two arbitrators, the Presiding arbitrator shall be appointed by the Secretary of the Ministry of Home Affairs. The Arbitration and Conciliation Act, 1996 and any statutory modification or re-enactment thereof, shall apply to these

	arbitration proceedings. (b) Arbitration proceedings shall be held in India at the place indicated in SC and the language of the arbitration proceedings and that of all documents and communications between the parties shall be English. (c) The decision of the majority of arbitrators shall be final and binding upon both parties. The expenses of the arbitrators as determined by the arbitrators shall be shared equally by the Employer and the Consultant. However, the expenses incurred by each party in connection with the preparation, presentation shall be borne by the party itself. All arbitration awards shall be in writing and shall state the reasons for the award.

9. LIQUIDATED DAMAGES

9.1 Liquidity Damages	The parties hereby agree that due to negligence of act of any party, if the other party suffers losses, damages the quantification of which may be difficult, and hence the amount specified hereunder shall be construed as reasonable estimate of the damages and both the parties agree to pay such liquidated damages, as defined hereunder as per the provisions of this Contract.
9.2 Liquidity Damages	The amount of liquidated damages for a particular deliverable under this Contract shall not exceed 1 % of the proportionate value of the portion of that deliverable which is deemed incomplete by the Employer as specified in Appendix D.
9.3 Liquidity Damages	The liquidated damages shall be applicable under following circumstances: (a) If a particular deliverables is not submitted as per schedule as specified in SC 13 on account of reasons solely attributable to the Consultant, the Consultant shall be liable to pay 5% of the total cost of that deliverable, for delay of each week beyond 30 days or part thereof. (b) If a particular deliverables is not acceptable to the Employer as mentioned in Clause 6.3 (f), and defects are not rectified to the satisfaction of the Employer within 30 days of the receipt of the notice, the Consultant shall be liable for Liquidated Damages for an amount equal to 5% of total cost of that particular deliverable for every week or part thereof for the delay.

10. MISCELLANEOUS PROVISIONS

10.1 Miscellaneous Provisions	(i) "Nothing contained in this Contract shall be construed as establishing or creating between the Parities, a relationship of master and servant or principal and agent.

(ii) Any failure or delay on part of any Party to exercise right or power under this Contract shall not operate as waiver thereof.

(iii) The Contractor/Consultant shall notify the Employer/ the Government of India of any material change in their status, in particular, where such change would impact on performance of obligations under this Contract.

(iv) Each member/constituent of the Contractor/Consultant, in case of a Consortium, shall be jointly and severally liable to and responsible for all obligations towards the Employer/Government for performance of works/services including that of its Associates/Sub Contractors under the Contract.

(v) The Contractor/Consultant shall at all times indemnify and keep indemnified the Employer/Government of India against all claims/damages etc. for any infringement of any Intellectual Property Rights (IPR) while providing its services under the Project.

(vi) The Contractor/Consultant shall at all times indemnify and keep indemnified the Employer/Government of India against any claims in respect of any damages or compensation payable in consequences of any accident or injury sustained or suffered by its (the Contractor's/Consultant's) employees or agents or by any other third Party resulting from or by any action, omission or operation conducted by or on behalf of the Contractor/Consultant.

(vii) The Contractor/ Consultant shall at all times indemnify and keep indemnified the Employer/Government of India against any and all claims by Employees, Workman, Contractors, sub-contractors, suppliers, agent(s), employed engaged or otherwise working for the Contractor, in respect of wages, salaries, remuneration, compensation or the like.

(viii) All claims regarding indemnity shall survive the termination or expiry of the Contract.

III. Special Conditions of Contract

Number of GC Clause	Amendments of, and Supplements to, Clauses in the General Conditions of Contract
1.5	The addresses are: Employer: Deputy Director General Attention: Unique Identification Authority of India (UIDAI), Planning Commission, Govt. of India (GoI), 3rd Floor, Tower II, Jeevan Bharati Building, Connaught Circus, New Delhi – 110001 Facsimile: 011-23753706 Attention: Mr. B.B. Nanawati E-mail: bbnanawati@uidai.gov.in Consultant: Ernst & Young Private Limited Golf View Corporate Tower B, Golf Course Road Sector – 42, Gurgaon Haryana – 122 022 Attention: Mr. Sunil R Chandiramani Facsimile: 0124-464 4050 E-mail: sunil.r.chandiramani@in.ey.com
1.7	The Lead Partner is M/s *Ernst & Young Pvt. Ltd*
1.8	The Authorized Representatives are: For the Employer: Mr. B.B. Nanawati For the Consultant: Mr. Sunil R Chandiramani
2.1	Pursuant to the clarification dated 04-Jan-2010 (Appendix A-Part B:Section 7 Clarifications to queries related with standard contract: S. No 3) issued by the Employer. the Consultant must start the consultancy assignment within 15 days after the contract is signed by both parties
2.3	The date for the commencement of Services: Within 15 days from the signing of the contract between the Employer and the Consultant

2.4	The time period shall be thirty six months or such other period as the parties may agree in writing.
2.9.5(b)	Pursuant to the clarification dated 04-Jan-2010 (Appendix A-Part B:Section 7 Clarifications to queries related with standard contract: S. No 6) issued by the Employer, the clause GC 2.9.5(b) shall be substituted as under "If the agreement is terminated pursuant of Clause 2.9.1 (a) to (c), (f) and (i), the consultant shall not be entitled to receive any agreed payments upon termination of the contract. However, the "Employer" may consider to make payment for the part satisfactorily performed on the basis of Quantum Merit as assessed by it, if such part is of economic utility to the Employer. Applicable Under such circumstances, upon termination, the Employer may also impose liquidated damages as per the provisions of Clause 9 of this agreement. The consultant will be required to pay any such liquidated damages to Employer within 30 days of termination date."
3.4	Pursuant to the clarification dated 04-Jan-2010 (Appendix A-Part B:Section 7 Clarifications to queries related with standard contract: S. No 15) issued by the Employer, if the insurance cover already possesses these insurances, specific insurance need not be taken. However, clear documentation with respect to these insurances need to be given to the Employer. In case the Employer deems than the insurance cover is not satisfactory, the consultant shall procure project specific insurance
3.5	The risks and the coverage shall be as follows: (a) Third Party motor vehicle liability insurance in respect of motor vehicles operated in the Government's country by the Consultant or its Personnel or any Sub-Consultants or their Personnel, with a minimum coverage as per Motor Vehicles Act 1988; (b) Third Party liability insurance, with a minimum coverage of the value of the contract (c) professional liability insurance, with a minimum coverage of the value of the contract (d) employer's liability and workers' compensation insurance in respect of the Personnel of the Consultant and of any Sub-Consultants, in accordance with the relevant provisions of the Applicable Law, as well as, with respect to such Personnel, any such life, health, accident, travel or other insurance as may be appropriate; and (e) insurance against loss of or damage to (i) equipment purchased in whole or in part with funds provided under this Contract, (ii) the Consultant's property used in the performance of the Services, and (iii) any documents prepared by the Consultant in the performance of the Services.

5.2	Pursuant to the clarification dated 04-Jan-2010 (Appendix A-Part B:Section 7 Clarifications to queries related with standard contract: S. No 18) issued by the Employer, any payments or refunds shall be in accordance with the financial norms laid down by the Employer
6.1(b)	The amount in local currency is *INR* **7,05,90,676.**
6.3	The accounts are: For local currency: *Indian Rupees (INR)* Pursuant to the clarification dated 04-Jan-2010 (Appendix A-Part B:Section 7 Clarifications to queries related with standard contract: S. No 5) issued by the Employer, for the **Consultancy assignment**, payments are linked to the deliverables according to the following schedule: (i) Ten (10%) percent of the lump-sum amount quoted for consultancy assignment shall be paid upon acceptance of the following deliverables by UIDAI: (a) 'Programme Management Strategy, Components, Roadmap, and Implementation Plan' (ii) Ten (10%) percent of the lump-sum amount quoted for consultancy assignment shall be paid upon acceptance of the following deliverables by UIDAI: (a) 'Strategy, Business Models, Business Cases, and Potential Revenue Streams for CIDR' (b) 'Implementation Strategy and Implementation Roadmap for the CIDR' (iii) Twenty (20%) percent of the lump-sum amount quoted for consultancy assignment shall be paid upon acceptance of the following deliverables by UIDAI: (a) 'Overview of Functional and Technical Solution of the CIDR, as input to the DPR' (b) 'Functional and Technical Requirements Specifications for the non-IT (physical) infrastructure of the CIDR' (c) 'Functional and Technical Requirements Specifications for the IT systems of the CIDR' (d) 'Detailed Project Report (DPR) for implementation of the CIDR' (iv) Fifteen (15%) percent of the lump-sum amount quoted for consultancy assignment shall be paid upon acceptance of the following deliverables by UIDAI:

	(a) 'Request for Proposals (RFPs)': RFP 1: Selection of Data Center Construction Agency to design, construct, and commission the CIDR facilities (physical infrastructure) RFP 2: Procurement of interim co-location facilities for the CIDR RFP 3: Selection of Managed Service Provider (MSP) to implement, and manage the CIDR (v) Ten (10%) percent of the lump-sum amount quoted for consultancy assignment shall be paid upon acceptance of the following deliverables by UIDAI: (a) 'Risk Management Strategy and Plan for the CIDR' (b) 'Information Security Plan and Policies for the CIDR' (c) 'Disaster Recovery Plan (DRP) and Business Continuity Plan for the CIDR' (vi) Ten (10%) percent of the lump-sum amount quoted for consultancy assignment shall be paid upon completion of the 'Bid Process Management for Selection of Managed Service Provider'. The payment shall be made on selection of the Managed Service Provider. (vii) Fifteen (15%) percent of the lump-sum amount quoted for consultancy assignment shall be paid upon completion of the 'Certification and Go-Live of the CIDR'. (viii)Five (5%) percent of the lump-sum amount quoted for consultancy assignment shall be paid upon acceptance of the 'Terms of Reference for 3rd Party Audits' by UIDAI (ix) Five (5%) percent of the lump-sum amount quoted for consultancy assignment shall be paid upon completion of '3 months of Post-implementation Project Management Services' **UIDAI shall make the above payments within 30 days for all the deliverables which have been satisfactorily delivered and accepted.** Pursuant to the clarification dated 04-Jan-2010 (Appendix A-Part B:Section 7 Clarifications to queries related with standard contract: S. No 20) issued by the Employer, it is clarified that the final report and final statement applies to each deliverable
8.2	The Arbitration proceedings shall take place in New Delhi in India.
9.2	Pursuant to the clarification dated 04-Jan-2010 (Appendix A-Part B:Section 7 Clarifications to queries related with standard contract: S. No 8), the amount of liquidated damages for a particular deliverable under this Contract for a

	delay in submission less than 30 days shall not exceed 1 % of the proportionate value of the portion of that deliverable (as specified in Appendix D) which is deemed incomplete by the Employer as on the specified date of submission of that deliverable'

Signed, Sealed and Delivered for & on behalf of M/s Ernst & Young Pvt. Ltd

Signed

Name : Sunil Chandiramani

Designation : Partner & National Director

Date : 17th M[illegible]10

Place : **New Delhi**

Signed, Sealed and Delivered for and on behalf of the President of India

Signed

Name : B.B. Nanawati

Designation : DDG, UIDAI

Date : 17th March 2010

Place : **New Delhi**

Signed, Sealed and Delivered for & on behalf of M/s Netmagic Solutions Pvt. Ltd.

Signed

Name : __________

Designation : __________

Date :

Place : **New Delhi**

in the presence of :

Signed

Name : Guru Malladi

Designation : Partner, Ernst & Young

Date : 17 March '10

Place : **New Delhi**

in the presence of :

Signed

Name : __________

Designation : __________

Date :

Place : **New Delhi**

IV. Appendices

APPENDIX - A :: PART A

DESCRIPTION OF SERVICES

1. Introduction

The inability to prove identity is one of the biggest barriers in India which prevents the poor from accessing benefits and subsidies provided by the Government. Public as well as private sector agencies across the country typically require proof of identity before providing individuals with services. But till date, there exists no nationally accepted, unique and verified identity number that both residents and agencies can use with ease and confidence.

The Government of India (GoI) has embarked upon an ambitious initiative to provide a Unique Identification (UID) to every resident of India and has constituted the Unique Identification Authority of India (UIDAI) for this purpose. The timing of this initiative coincides with the increased focus of the GoI on social inclusion and development through massive investments in various social sector programs, and transformation in public services delivery through e-Governance programs. The scale of the UID initiative is unprecedented and its implementation will involve active participation of Central, State, and Local Governments, as well as public and private sector agencies across the country.

All existing identity databases in India are fraught with problems of fraud and duplicate/ghost beneficiaries. To prevent this from seeping into the UIDAI database, the Authority plans to enroll residents into its database after proper verification of their demographic and biometric information. This will ensure that the data collected is clean from the start of the program. Hence the UIDAI aims to achieve de-duplication and ensure that each resident in the country has a unique identification number.

A project of the scale of the UID has not been attempted anywhere in the world where the biometric and other details of a billion plus people have been stored. To implement this ambitious initiative, the UIDAI has devised a partnership approach that leverages the existing infrastructure of Government and private agencies across India. The UIDAI will be the regulatory authority managing a Central ID Data Repository (CIDR), which will issue UID numbers, update resident information, and authenticate the identity of residents as required. In addition, the Authority will partner with agencies such as Central and State Government departments and private sector agencies who will be 'Registrars' for the UIDAI. Regis will process UID applications, and connect to the CIDR to de-duplicate information regarding residents and receive UID numbers. These Registrars can either be enrollers, or will appoint agencies as enrollers, who will interface with people seeking UID numbers. The Authority also plans to partner with service providers for providing authentication services.

Pursuant to the clarification dated 04-Jan-2010 (Appendix A-Part B:Section 6 Clarifications to queries related to the Terms of Reference and Scope of Work),It has been further clarified that scope of work for the Consultant would also include the following:

i. Designing the programme management strategy, programme plan and implementation roadmap for UID project which shall include CIDR implementation as one of the critical programme components;

ii. Formulating the strategy, business models, and implementation roadmap for the Central ID Data Repository (CIDR) of the UID project. The CIDR is essentially a service provider to the UIDAI and will provide services which include the processing of enrolment and authentication requests, based on the business model

iii. Formulating the requirements & specifications for the CIDR; preparing the required RFPs; managing the bid processes; selecting a Managed Service Provider (MSP); defining functional and technical requirements specification of the application software; and providing project management services for the implementation of the CIDR. The consultant's scope of work does not include formulating processes and guidelines for the UID project

The term "CIDR", used henceforth in this contract, includes the complete UID application software, IT infrastructure, data center as well as the disaster recovery center facilities.

2. Functions of the UIDAI

The Unique Identification Authority of India (UIDAI) has been created as an attached office under the Planning Commission. Its role is to develop and implement the necessary institutional, technical and legal infrastructure to issue unique identity numbers to Indian residents. The Authority will prescribe guidelines on the biometric technology, the various processes around enrolment, and KYR verification. The UIDAI will also design and create the institutional microstructure to effectively implement the policy.

The CIDR will be implemented and managed by a Managed Service Provider. Registrars will send the applicant's data to the CIDR for de-duplication. The CIDR will perform a search on key demographic fields and on the biometrics for each new enrolment, to ensure that no duplicates exist. The CIDR will store resident records, issue UID numbers, and verify, authenticate and amend resident data.

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The functioning of UIDAI and the activities to be performed by it would serve multiple objectives. The Authority shall have the responsibilities to lay down plans and policies to implement the UID, shall own and operate the UID database, and be responsible for its updation and maintenance on an ongoing basis. The figure below describes the proposed functional areas involved in the scope of the work of the UIDAI.

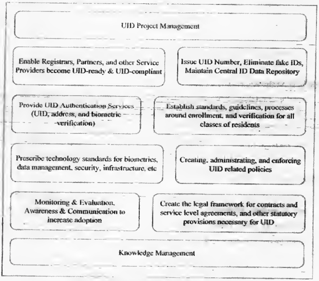
UID Project Management
Enable Registrars, Partners, and other Service Providers become UID-ready & UID-compliant
Issue UID Number, Eliminate fake IDs, Maintain Central ID Data Repository
Provide UID Authentication Services (UID, address, and biometric verification)
Establish standards, guidelines, processes around enrollment, and verification for all classes of residents
Prescribe technology standards for biometrics, data management, security, infrastructure, etc
Creating, administrating, and enforcing UID related policies
Monitoring & Evaluation, Awareness & Communication to increase adoption
Create the legal framework for contracts and service level agreements, and other statutory provisions necessary for UID
Knowledge Management

Figure: Functional Scope of the UIDAI

Project Management:

a. Conceive and monitor the progress of the implementation of the project
b. Ensure that the target milestones are being met by all partner entities in implementing the UIDAI's objectives.
c. Implement and ensure the usage of standard project management processes, and tools
d. Risk assessment and issue monitoring
e. Enable the sharing of knowledge and best practices amongst project stakeholders
f. Act as the single point of contact for information on UID to Government entities and stakeholders.

Enable Registrars, Partners, & other Service Providers become UID-ready:

g. Enable on-boarding of individual Registrars (such as NREGA, RSBY, and PDS) into the UID system.

h. Support Registrars and agencies in adopting the UID authentication process and help define the infrastructure and process changes needed for UID-readiness. This will include linking to the CIDR, connecting to the UID system, and adding UID fields to their databases.

i. Since a financial inclusion platform can effectively use the UID services in order to bring about secure authentication for micropayments and delivery of financial services. there is a need to support several registrars (such as NREGA, IAY etc) who will need to do direct payments to residents.

Provide UID Authentication Services:

j. Develop guidelines for pricing of UIDAI's authentication services, which include UID verification, address verification, and biometric confirmation.

k. Prepare guidelines for compliance by agencies registered with the UIDAI in using the UID authentication services as well as in managing resident information.

Establish standards, guidelines, processes for enrollment, verification:

l. Prepare standards to enable Registrars maintain uniformity in collecting biographic and biometric information and for collecting information for basic Know Your Resident (KYR). These standards will be finalized by the KYR and biometric committees the Authority constitutes. To make sure the poor are not excluded, guidelines will also need to be prescribed for applicants without documents.

m. Devise suitable procedures for KYR that will ensure the enrollment and inclusion of the poor into the UID database without compromising data integrity.

n. Develop procedures for applying for a UID number including application form formats, types of supporting documents, timeframes for issuance of UID numbers.

n. Develop pre-enrollment processes in order to get the form filling and verification processes completed earlier and locally, so that the biometric enrollment is done quickly at enrollment workstations.

p. Develop the processes by with new births being captured by the birth registration process is being integrated into the UID project in order to issue UIDs to infants as well. Similar process for updating death occurrences needs to also be integrated into the UID database.

Prescribe technology standards:

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q. Prescribe guidelines on biometric technologies, various processes around enrollment, and KYR verification.

r. Devise norms and procedures for fingerprint capture and verification and for introduction of a robust biometric authentication process at every point of transaction.

s. Prescribe data management and security protocols, internal control mechanisms and other technology safeguards to preserve and protect information.

t. Prescribe standards including biometric standards to be followed by Registrars and enrolling agencies for performing their functions and duties in connection with the work of the UIDAI.

u. Prescribe standard workstations for enrollment as well as standards for authentication devices. Develop a program of empanelment of vendors who can provide certified devices.

Creating, administrating, and enforcing policies:

v. Identification of multiple approaches to reach specific population segments, especially marginalized groups, such as urban poor, children, women, differently-abled people, and tribal groups. In addition to this, there is a need to reach out to other marginalized groups such as homeless people, individuals in shelter homes, remand homes, asylums, etc.

w. Since UID will be a lifetime number and might require updates through the life-cycle of an individual, appropriate policies and procedures have to be put in place for expiry and re-activation of the UID, and updating the biographic and biometric information in the UID databases. Children may have to update their biometric information every five years, while adults may have to update their information every ten years.

Monitoring & evaluation to improve implementation and study impact:

x. Devise plans and procedures for carrying out periodic information and process audits of Registrars and agencies to ensure data quality and compliance of guidelines recommended by UIDAI. The information audit might focus on verification of information that comes in from Registrars against scanned and physical documents. It should also include the monitoring of the efficacy of the enrollment process to enroll all the UID aspiring residents in a smooth and effective manner. The process audit might be carried out at various enrollment sites and focus on the processes, software, and systems put in place by agencies for enrollment.

Awareness & communication to increase adoption:

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y. Develop guidelines and policies for partnership with civil society groups and community networks for promotion of the UID number, and information dissemination on UID enrollment especially for rural women, tribal folks, and other hard-to-reach population segments.

Legal framework for contracts, service level agreements, etc:

z. Draft contractual agreements to enable the Authority enter into contracts with Registrars for ensuring confidentiality of information they collect and store. Also agreements may need to be entered into with some Registrars and Service Providers for the sole purpose of using the authentication services of the CIDR.

aa. Prepare template for contractual agreements between registrars and their enrolling agencies in order to conduct enrolments in compliance with the KYR and Biometric standards as defined by the UIDAI

bb. Prepare the mechanism for dispute resolution in case of a dispute whether the duplicate identified by the UID system is because of fraud or technical error. Define the applicable penal actions in fraud cases.

cc. Prescribe regulations for the functioning of the CIDR, Registrars, enrolling agencies, and other service providers.

Knowledge Management:

dd. Implement effective tools for knowledge management to capture learning from successes and failures during the course of the project implementation. This repository of knowledge can serve as a vital input to re-design or re-frame processes, standards, and policies as the project gets rolled-out across the country.

In order to achieve the above the objectives, a Project Management Unit (PMU) has been established to provide technical and managerial support to the UIDAI in the implementation of the UID project. The consultant selected through this RFP is expected to work in close coordination with the PMU.

For more details on the UID project, refer to the project concept paper – "Creating a unique identity for every resident in India - Draft approach", available on the website http://www.uidai.gov.in

Overview of Scope of Work

The scope of work for the consultant inter-alia shall include the following:

A) Planning and formulating the overall Programme Management Strategy; identifying Components; preparing a Roadmap and Implementation Plan for the UID project
B) Identifying and developing Strategy, Business Models, and Business Cases for potential revenue streams from the CIDR
C) Conceiving and formulating the Implementation Strategy and Roadmap for the CIDR
D) Formulating the detailed Functional and Technical Requirements Specifications for all the IT and non-IT (physical infrastructure) components of the CIDR
E) Preparation of Detailed Project Report (DPR) for implementation of the CIDR
F) Preparation of Request for Proposals (RFPs):
    1. RFP 1: Selection of Data Center Construction Agency to design, construct, and commission the CIDR facilities (physical infrastructure)
    2. RFP 2: Procurement of interim Co-location facilities for the CIDR
    3. RFP 3: Selection of Managed Service Provider (MSP) to implement, manage, and maintain the CIDR
G) Bid Process Management for the RFPs
H) Formulating the Risk Management Strategy and Plan for the CIDR
I) Developing the Information Security Plan and Policies for the CIDR
J) Developing the Business Continuity Plan and Disaster Recovery Plan for the CIDR
K) Providing Project Management Services for the CIDR, including implementation and post-implementation monitoring, validation and certification of CIDR readiness to Go-Live

The deliverables of the consultancy have also been aligned with the above scope of work as articulated below.

4. Detailed Scope of Work

The detailed terms of reference for the scope of work items mentioned above, are as follows:

4.1 Planning and formulating the overall Programme Management Strategy; identifying Components; preparing a Roadmap and Implementation Plan for the UID project

(i) The consultant shall come out with a programme management strategy and roadmap for implementation of the UID project that links the underlying objectives of the UID project to the technical solution

(ii) Considering the scale of the initiative, there will be overwhelming demands on the service delivery infrastructure of the UID project to deliver the UID services to a myriad range of stakeholders. So while developing the programme plan, the consultant will have to spend time with the UIDAI management and technology team, and other stakeholders to understand the future directions of the UID initiative and align various project components accordingly.

(iii) The programme plan should provide an integrated view of the major events, activities, deliverables, and dependencies within the individual projects that comprise the UID initiative, together with the planned completion dates, progress indicators and other information. The plan should also provide a connected-view to other initiatives (related or linked) in the UID ecosystem that may impact the direction or outcomes of the project.

Deliverable D1:

Programme Management Strategy, Components, Roadmap, and Implementation Plan

4.2 Identifying and developing the Strategy, Business Models, and Business Cases for potential revenue streams from the CIDR

(i) Identity authentication of individuals is a process that costs government and private agencies hundreds of crores each year. The CIDR which will contain the central UID database plans to offer a range of identity authentication and verification services on a transaction fee basis, which will offset its long-term costs. The consultant shall identify and develop strategies through which innovative identity-based services and other value-added services can be offered by the CIDR, based on a business model.

(ii) The business model should include the various types of revenue streams arising out of delivery of the proposed services from CIDR. The business cases should enable the UIDAI to objectively measure the expected revenues, expected costs, benefits, policy implications, and risks of the proposed business model. The Employer is currently in the process of identifying the demand generation aspects of the UID project. The consultant shall consult and interface with the stakeholders in this activity. The Employer will provide necessary support for interaction with stakeholder departments.

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(iii) If the legal framework necessitates changes in the Strategy and Business Models, the consultant shall modify/ update the same in consultation with the Employer. The role of The Consultant is limited to business model for revenue streams arising out of delivery of services from the CIDR. The consultant shall provide the options, checklists, and approaches for strategic evaluation and validation for CIDR revenue models. The primary objective is to be self-sustainable.

Deliverable D2:

Strategy, Business Models, Business Cases, and Potential Revenue Streams for CIDR

4.3 Conceiving and formulating the Implementation Strategy and Roadmap for the CIDR

(i) The CIDR will be a resource of paramount importance for the UIDAI and the Government at large. The consultant should devise an implementation strategy for the CIDR keeping in mind that the growth and capacity demands will increase at a steady pace over time.

(ii) The consultant should look at technology trends and roadmaps and devise a multi-pronged approach to enable the growth and diversity for the next 3 – 10 years, in innovative, realistic and cost-effective ways. The approach should focus on:

- Providing sufficient scalability in the CIDR while optimizing resource utilization through efficient processes and new technologies
- Ensuring resiliency through appropriate architectures and incorporation of technologies such as virtualization and cloud computing
- Creation of a set of data centers for load balancing, network routing and in general optimal performance of the entire CIDR to deliver on enrolment and authentication transactions.
- Automation in management of the CIDR facilities, networks, and services
- Adoption of emerging technologies relevant to the CIDR

(iii) The consultant shall study, evaluate and provide recommendations on various implementation models for building and running the CIDR. Th implementation models should consider various aspects involved in building, owning, and operating the CIDR by the Managed Service Provider. The issues related to providing strategic control of the CIDR assets to the UIDAI should also be considered while designing the appropriate implementation models.

(iv) Given the national importance of the CIDR infrastructure and services, the consultant needs to come up with strategies to ensure that there is no (or minimal) vendor lock-in as well as eliminate the reliance on technologies and components whose availability is dependant on trade policies or security clearances of other countries.

(v) The implementation strategy shall take into account aspects like TCO, capital outflows from the Government and the payment streams to the MSP linked to pre-determined goals against Service Level Agreements (SLAs), including Operational Level Agreements (OLAs).

(vi) The implementation strategy devised by the consultant will take into account the initial pilot implementation of the CIDR in an interim co-location facility and the eventual migration to the permanent full-fledged custom-built CIDR facilities. The implementation strategy shall also propose an overall approach for application life-cycle management, scalability, testing, benchmarking, and post-implementation monitoring mechanisms.

(vii) The consultant shall develop a site selection processes for the interim co-location facility and the custom-built CIDR facilities, considering all critical selection criteria.

(viii) The consultant shall also develop a detailed project implementation roadmap describing the phases, activities and responsibilities in the project implementation and management of the CIDR. The project implementation roadmap shall include sensitivity analysis vis-a-vis time and cost overruns

(ix) The consultant shall prepare a report which at the minimum shall provide answers to the following key questions:

- How many data centers (DC, Disaster Recovery, Near-site) will be needed for the CIDR?
- What are the key sub-components of the CIDR Application software (biometrics, fraud detection etc)?
- What is the composition of the MSP from a technology components, technology provider, implementer, and operator points of view?

- What are the business and implementation models and the costs, benefits, and risks associated with each model?
- What are the estimated budgets, timelines, roadmap for implementation, and sensitivity analysis relating to the same?
- What is the right procurement (bundling) and implementation strategy?
- What is the strategy for migration of the CIDR from the interim co-location facility to the custom-built CIDR facilities?
- What is the CIDR Go-Live strategy?
- What will be the CIDR acceptance strategy?

Deliverable D3:

Implementation Strategy and Implementation Roadmap for the CIDR

4.4 Formulating the detailed Functional and Technical Requirements Specifications for all the IT and non-IT (physical infrastructure) components of the CIDR

The primary goal of the consultant in this activity is to formulate the detailed functional and technical requirements specifications for all the components of the CIDR, including the CIDR Application software, IT infrastructure and the non-IT (physical) infrastructure. These requirements specifications shall form the basis for preparation of the DPR for implementation of the CIDR, as well as the RFPs for Data Center Construction Agency and Managed Service Provider.

4.4.1 Overview of the Functional and Technical Solution of the CIDR, as input to the CIDR

(i) As a pre-cursor to the detailed functional and technical requirements specifications for the CIDR, the consultant shall prepare and document the overview of the CIDR functional and technical solution, which shall provide as an input to the Detailed Project Report (DPR). As part of the scope of work for providing the functional and technical requirements specifications for the IT infrastructure, the consultant is expected to provide details of the various integration requirements for the CIDR, which includes interface specifications and standards for interoperability with other systems also.

(ii) UIDAI staff will be the primary stakeholder the consultant will have to meet. It is expected that existing design requirement documents prepared by the PMU and other members of UIDAI around the key technologies will be provided to the consultant

(iii) The Consultant shall ensure that all the aspects related to information security, including user security policy/ manuals and handbooks, privacy policy, need to be designed as part of the deliverable related to information security plan and policies for the CIDR.

(iv) Obtaining regulatory approvals for the CIDR physical infrastructure is not within the scope of the consultant. However, the consultant shall have to advise and guide the UIDAI on the various regulatory approvals and permissions that may be needed for establishing the CIDR facilities

Deliverable D4:

Overview of the Functional and Technical Solution of the CIDR, as input to the DPR

4.4.2 Functional and Technical Requirements Specifications for the non-IT (physical) infrastructure of the CIDR

(i) The consultant shall formulate the functional and technical requirements specifications for the non-IT (physical) infrastructure of the CIDR facilities, taking into account various aspects related to site selection; architecture and space planning; electrical system design; mechanical design; security related factors; and flexibility, scalability, and modularity, conforming to industry standards.

(ii) The consultant should propose critical design considerations and best practices, and determine the optimal tier-level classification for the CIDR facilities. The Uptime Institute's tier classification system should be adopted as an industry-accepted standard for designing the requirements specifications of the CIDR and for defining the levels of fault tolerance.

(iii) The requirements specifications should be formulated in such a way that the CIDR is designed as an integrated system that optimizes electrical, power, space allocation, and mechanical systems, including but not limited to:

- Power source – power distribution, including UPS, backup diesel generation, power distribution units (PDUs), and intermediate distribution units
- Heating, ventilation, and air conditioning (HVAC) systems – these may include rooftop units and distributed units that provide localized air cooling; additional cooling and air handling between racks. The specifications should also focus on provisioning for and maintaining adequate cooling and air movement, given the intense heat gain of modern blade server and direct-access storage device equipments.
- Fire protection systems (as per local fire department regulations) – including detection and abatement systems that most likely will combine pre-action wet systems interconnected with dry systems for sensitive areas, such as disk storage areas.
- Security systems – including local and centralized security systems
- Raised floor systems – depending upon the floor size
- Make recommendations on Green IT solutions for the Data Center

(iv) The consultant should take into account the following while formulating the specifications for the electrical system design, but not limited to:

- Assessment of overall power requirements (using rack unit as a measure)
- Provision for multiple feeds
- Provision of maintenance and emergency shutdown switches at all entry points in the facility
- Grounding and bonding system that complies with applicable codes and regulations
- Determining if equipment requires single phase or three-phase power
- Provision of single reference grid to reduce high-frequency impedance
- Use of higher-gauge wire for future expansion
- Use of PDUs to integrate circuit breakers and equipment connections
- Use of power conditioning equipment to integrate with the UPS
- Provision to maintain relative humidity levels to minimize electrostatic discharge

(v) The specifications for architecture and space design should focus on the raised floor area, lifts, rack layout, workstations and support areas, such as conference and supply rooms, as well as shipping, receiving, and staging areas.

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(vi) The consultant should also assess the impact of new hardware technologies on the physical infrastructure while formulating the requirements specifications for the CIDR facilities.

(vii) The consultant should do a comprehensive estimation of the CIDR facilities' construction costs and associated life cycle costs. The estimate should also include cost elements related to diesel power, UPS, electrical system design, different levels of data center reliability and fault tolerance. The consultant should evaluate the level of redundancy (tier level) and its associated cost versus the cost of downtime. Sensitivity analysis relating to time and cost overruns should also be incorporated.

(viii) The consultant should determine requirements for management of the CIDR and helpdesk facilities that best aligns with the requirements and priorities of the project.

(ix) The consultant shall specify detailed functional and technical requirements for an Integrated Building Management System for the CIDR facilities.

(x) The consultant shall develop specifications for both physical and logical security. The specification should include for complete closed circuit television surveillance system; sensing devices and controlled access systems; including card key, in combination with a biometric authentication system, remote monitoring and control system.

Deliverable D5:

Functional and Technical Requirements Specifications for the non-IT (physical) infrastructure of the CIDR

4.4.3 Functional and Technical Requirements Specifications for the IT systems of the CIDR

(i) The consultant shall provide detailed functional and technical requirements for all the IT system components of the CIDR, including but not limited to: application software, middleware, biometric matching and de-duplication software, database, front-end and back-end systems, servers, networking, security, storage, etc. The requirements should clearly state the comprehensive capabilities, service levels and performance levels for all the IT components.

(ii) In order to assess the technical implications of the CIDR, the UIDAI is planning to implement a Proof-of-Concept (PoC)/ Pilot solution. The learnings from the PoC/ Pilot shall be dove-tailed into the full-fledged CIDR solution that will be implemented by the Managed Service Provider (MSP). The consultant is required to interact and work closely with the PoC team, PMU, and other stakeholders of the UIDAI while formulating the detailed functional and technical requirements specifications for the CIDR IT systems. UIDAI will provide results of the PoC and pilot that should be used in formulating requirements for MSP. The consultant is required to receive and understand the output of the Poc/Pilot from concerned parties. The consultant is not expected to document learning from PoC/Pilot by analyzing PoC and Pilot results.

(iii) The consultant shall propose and make use of best practices, standards, and proven methodologies while formulating the requirements specifications of the IT system components for long-term efficiency, availability, and reliability of the CIDR.

(iv) The biometric sub-system is central to the CIDR for enrolling as well as authenticating residents. It is likely that a multi-modal biometric solution will be used to achieve a high level of assurance. The 1:N de-duplication envisioned will be by far the most computing-intensive operation of the UID system. Innovative techniques of hashing, indexing, distributed processing, and in-memory databases using multiple-biometric-modes will need to be employed to get acceptable performance. The consultant should evaluate and propose the latest technology trends in cloud computing, massive memory management, biometric matching algorithms, etc., in the design of the IT systems.

(v) The consultant shall build a 5 and 10 year growth model for the CIDR based on: demand assessment; availability, performance, & scalability requirements; future data-processing needs (associated with biometric de-duplication, data search, etc); and likely technological evolution. Based on the above, the consultant shall develop a methodology for workload analysis and sizing.

(vi) The consultant shall propose and use various technical parameters and guidelines to formulate the requirements specifications of the IT system components. The parameters should take into account, factors such as:

- network load and latency;
- server, database, storage, network, and bandwidth sizing;
- requirements for network monitoring and control;
- expected processing load and distribution of load across the various technology components (specifically, the backend servers and storage that will need to be architected for the high demands of the 1:N biometric

de-duplication as well as the large peak loads from authentication requests)

(vii) The consultant shall work closely with the technology team of the UIDAI to develop a set of overarching architecture and design principles and requirements' for the CIDR IT systems, and to select the relevant viewpoints for documenting the various architectures' of the CIDR. The architecture viewpoints may include: application architecture, data architecture, network architecture, security architecture, and deployment architecture.

(viii) The architecture should provide details of the various integration requirements for the CIDR, including:

- interface specifications and standards for interoperability of CIDR with multiple users;
- upload and batch processing modes;
- integration with mobile networks, point-of-sale (POS)/ point-of-transaction (POT) devices,
- integration of network, application, and biometric layers with the CIDR database;
- integration of UID processes and the technology solution.
- Integration with multiple networks is a critical aspect of the CIDR system, since all UID enrolment and authentication services will be available online. UID services could work over secure WAN networks, the vanilla internet or over mobile SMS channels. It could also potentially work over existing networks such as credit-card POS (point-of-service) devices.
- The consultant shall take into account the integration aspects of multiple such networks while formulating the functional and technical requirements of the CIDR

(ix) The requirements specifications should also provide details of all the other software components required in the CIDR, such as: OS and system software, enterprise anti-virus software, auditing tools, DNS software, messaging software, back-up software (with encryption capabilities), network management and infrastructure software, and building management systems (BMS).

(x) The consultant shall also specify functional and technical requirements for an administration system that will help administer the UIDAI's operations, including: account setup – creation/ modification of Registrars, enrolling and

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authenticating agency accounts; role based access control – assign rights over UID resources based on role; audit trailing – track every access to the UID system and store audit logs in a secure environment; fraud detection – detect identity theft and cyber crimes using audit trails; reporting and analytics – visual decision support tools – GIS, charting etc. The UIDAI will employ a GIS internet-based visual reporting system to track enrolment trends and patterns across India, as the project is rolled out across various Registrars and States. The GIS system will show all UID enrolments by State(s), as well as by Registrar(s). The system will also be able to drill down within States and into Districts.

(xi) Based on the requirements of the various IT system components, the consultant shall prepare the Bill of Materials (BOM) with specifications for all hardware, networking, and software components, biometric technologies, matching algorithms, etc., taking into account various technology aspects, cost effectiveness, reliability of the products and availability from several manufacturers/ OEMs, and technology obsolescence and product shelf-life. The consultant shall provide specifications of generic external interface adaptors for connecting with external data bases and systems (e.g. PAN database of Income Tax Dept). The study of the specific external databases, as and when they shall be finalized, is not part of scope of work of this Contract.

Deliverable D6:

Functional and Technical Requirements Specifications for the IT systems of the CIDR

4.5 Preparation of Detailed Project (DPR) for implementation of the CIDR

Based on the implementation strategy and the detailed functional and technical requirements specifications for the CIDR, the consultant shall prepare a Detailed Project Report (DPR) for implementation of the CIDR suggesting an implementation roadmap, resource requirements, timelines and budgetary requirements. The DPR will be the basis for obtaining the requisite sanction of funds for undertaking the project implementation. The DPR shall list out each project component, need and criticality for the same, resource requirements and the cost of implementation of each project component (detailed costing sheets will have to be prepared by the consultant). The DPR shall inter-alia contain the following:

- Overview of CIDR

- Strategy and Objectives of CIDR
- Benefits and Outcomes
- Implementation & Business Models
- Proposed Services and Service Levels
- Overview of Functional Solution
- Overview of Technical Solution
- Implementation Strategy & Roadmap
- Financial Estimates, for the complete implementation of the CIDR, including: interim co-location facilities, data center migration, permanent CIDR facilities, and implementation and management of the CIDR by the MSP:
  - Capital Expenditure Estimates (Capex)
  - Operational Expenditure Estimates (Opex)
- Assumptions and Risk Management Plan
- Detailed project schedule defining key phases, interdependencies, critical paths and key milestones, from design, procurement, supply, construction, installation, commissioning, and Go-Live of the CIDR

Deliverable D7:

Detailed Project Report (DPR) for implementation of the CIDR

4.6 Preparation of Request for Proposals (RFPs):

1. **RFP 1: Selection of Data Center Construction Agency to design, construct, and commission the CIDR facilities (physical infrastructure)**
2. **RFP 2: Procurement of interim co-location facilities for the CIDR**
3. **RFP 3: Selection of Managed Service Provider (MSP) to implement, and manage the CIDR**

(i) Based on the implementation strategy, and detailed functional and technical requirements specifications for the IT and non-IT infrastructure for the CIDR, the consultant shall prepare the following Request for Proposal (RFP)s:

1. RFP 1: Selection of Data Center Construction Agency to design, construct, and commission the CIDR facilities (physical infrastructure)
2. RFP 2: Procurement of interim co-location facilities for the CIDR

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3. RFP 3: Selection of Managed Service Provider (MSP) to implement, and manage the CIDR.

(ii) The UIDAI may decide to opt for bundling of the above-mentioned 3 RFPs as a single combined RFP (RFP 1 + RFP 2 + RFP 3) or as a combination of 2 RFPs, such as: (a) RFP 1, and (b) RFP 2 + RFP 3.

(iii) The consultant shall prepare the RFPs conforming to the Government of India guidelines on procurement of goods & services, including ICB procurement guidelines if necessary.

(iv) The consultant shall make detailed RFP presentations to the UIDAI as and when required

(v) The RFPs shall include inter-alia contain the following details:

- Description of the project background and context
- Purpose of the RFP; the scope of the services requested and what is not included in scope
- Project objectives. The objectives should broadly address aspects related to availability, service levels, efficiencies, security and resilience factors, flexibility, scalability and cost.
- List of key stakeholders along with roles and responsibilities
- Scope of work, roles and responsibilities of service provider. This section should itemize the specific services requested through the RFP. *The indicative broad scope of work for each of the RFPs has been provided below. The consultant shall provide the detailed scope of work in the RFPs based on exact requirements of the project in consultation with UIDAI.*
- Functional and technical requirements specifications
- Requirements for high availability & security
- Requirements for Strategic Control of the infrastructure assets
- Compliance to regulatory requirements
- Operational requirements
- Acceptance criteria & system and security audit requirements
- Commercial specifications & bid process requirements, including:
  - Bidders' eligibility and pre-qualification
  - Bid process activities
  - Bid formats and submission requirements
  - Bid evaluation criteria and process, including QCBS methodology

  - General terms and conditions for bidding including: cost of RFP, conflict of interest, modification and withdrawal of bids, etc
  - Payment terms
- Legal and contractual specifications. The contract agreement should be based on the General Conditions of Contract (GCC) and Special Conditions of Contract (SCC), as defined by Government of India procurement norms
- Service Level Agreement (SLA) based on service-level goals and objectives. The SLA should provide the following:
  - SLA terms and definitions
  - SLA calculation principles and metrics
  - Calculation of downtime and uptime
  - Audit compliance
  - Service levels during peak hours and extended business hours
  - Service level enforcement, penalties
  - Issue resolution time

4.6.1 Indicative broad scope of work for RFP 1

The consultant shall develop the scope of work to be included in "RFP 1: Selection of Data Center Construction Agency to design, construct, erect, and commission the CIDR facilities (physical infrastructure)", which shall inter-alia contain the following:

- CIDR planning and design based on the RFP requirements specifications
- Site preparation as per the civil, electrical, and mechanical systems requirements of the CIDR facilities;
- Construction, erection, commissioning, and testing of the CIDR facilities

4.6.2 Indicative broad scope of work for RFP 2

The consultant shall provide detailed requirements specifications to be included in "RFP 2: Procurement of interim co-location facilities for the CIDR", which shall inter-alia contain the following:

- Co-location facilities for DC and DRC, to install and operate the CIDR IT infrastructure, meeting electrical, cooling, environmental specifications for Tier III or higher grade Data Center

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- Specifications for multiple active power and cooling paths, with backup generator capabilities
- Specifications for secure, reliable, and scalable hosting, bandwidth, network and application services, redundancy, and multiple ISP support
- SLAs for availability of co-location facilities
- Secured access control with 24 * 7 monitoring with high-speed, fault-tolerant, secure data communications

4.6.3 Indicative broad scope of work for RFP 3

The consultant shall develop detailed scope of work to be included in "RFP 3: Selection of Managed Service Provider (MSP) to implement, and manage the CIDR", which shall inter-alia contain the following, but not limited to:

- Design, Development, and Implementation of the CIDR based on the functional and technical requirements of the CIDR IT systems
- Procurement, supply, installation, and commissioning of IT infrastructure components
- Migration of the IT infrastructure from the interim co-location facilities to the permanent CIDR facilities
- Implementation of information security management systems and infrastructure monitoring & management systems;
- Testing and benchmarking
- Documentation and training
- Operations support and maintenance
- Managed services for all operations and processes of the CIDR
- Application helpdesk, call centers and facilitation centers, and support services
- End-to-end logistics management of UID numbers
- Facilities management services for CIDR
- System and database administration
- IT systems management of UIDAI regional offices

Deliverable D8:

Request for Proposals (RFPs):

1) **RFP 1: Selection of Data Center Construction Agency to design, construct, and commission the CIDR facilities (physical infrastructure)**

2) **RFP 2: Procurement of interim co-location facilities for the CIDR**
3) **RFP 3: Selection of Managed Service Provider (MSP) to implement, and manage the CIDR**

Note: The above RFPs may be combined into 1 or 2 RFPs based on the discretion of the UIDAI

4.7 Bid Process Management for the RFPs

(i) The consultant shall undertake the following activities as part of bid process management for all the RFPs:

- Support the UIDAI in release of the RFP tender advertisements in newspapers
- Support the UIDAI in conducting Pre-Bid conferences (if necessary)
- Compile response to bid queries and clarifications, and make presentations before the Evaluation Committee
- Design the RFP evaluation criteria
- Pre-qualification evaluation
- Evaluation of the technical bids, conduct briefings and presentations to the Evaluation Committee
- Evaluation of the commercial bids
- Compile the evaluation reports and recommend the best bidder
- Support the Evaluation Committee to be set up by the UIDAI
- Evaluation of Bill of Materials (BOM)
- Support UIDAI in negotiations and closure
- Support the UIDAI in contract finalization with the selected bidder.

(ii) The consultant shall submit comprehensive bid evaluation reports, consisting of Pre-qualification evaluation, Technical evaluation, and Commercial evaluation.

Deliverable D9:

Bid Evaluation Reports, consisting of:

1) **Pre-qualification evaluation reports**
2) **Technical evaluation reports, and minutes of the evaluation committee meetings**

3) Commercial evaluation reports

4.8 Formulating the Risk Management Strategy and Plan for the CIDR

(i) The consultant shall follow standard risk assessment and management frameworks and methodologies, based on best practices, for formulating the risk management strategy and plan for the CIDR.

(ii) The methodologies shall cover both qualitative and quantitative analysis to derive the associated risk levels. The risk analysis methodology should cover: physical/ environmental threats, logical threats, communication threats, natural threats, and technological threats, etc.

(iii) The consultant shall prepare a comprehensive and practical risk management plan including specific recommendations on risk mitigation and avoidance strategies.

Deliverable D10:

Risk Management Strategy and Plan for the CIDR

4.9 Developing the Information Security Plan and Policies for the CIDR

(i) The consultant shall design an appropriate Information Security Management System (ISMS) for the CIDR facilities in accordance with the code of practice for information security management provided in ISO 27001:2005

(ii) The ISMS shall include appropriate security architecture to protect the confidentiality and integrity of information/ data held on or passing through the CIDR, and to protect the CIDR and the systems connected to it from accidental or deliberate or distributed denial of service attacks

(iii) The ISMS shall provide an analysis of the risks and vulnerabilities which the CIDR infrastructure will be subject to, and the countermeasures proposed

(iv) The consultant shall provide the approach to security audit and IT health checks for the CIDR facilities, and monitoring of security incidents and responses.

(v) The consultant shall propose the plan to obtain compliance to ISO 27001 and IT Act of the Government of India

(vi) The consultant shall prepare the security policy documents which will be complied with during the subsequent implementation and commissioning of the CIDR facilities. As part of this activity, the consultant should also frame network policies including firewall, access control, etc. The scope of work in this activity includes providing the complete plan and design of the ISMS, based upon which the CIDR facilities can be assessed for compliance to ISO 27001 and IT Act

Deliverable D11:

Information Security Plan and Policies for the CIDR

4.10 Developing the Disaster Recovery Plan (DRP) and Business Continuity Plan (BCP) for the CIDR

(i) The consultant shall design the Disaster Recovery Plan (DRP) and Business Continuity Plan (BCP) for the CIDR, which includes among other things: data replication strategies between the DC, DR, near-site; and DC-DR connectivity and failover procedures.

(ii) The BCP and DRP should be based on the following analysis:

- Identification of critical processes for business continuity and disaster recovery
- Formulation of RPO and RTO requirements
- Identification of appropriate network connectivity at backup/ recovery locations to enable business continuity
- Recommendation of best practices and options for business continuity
- Identification of requirements for establishing the DR site
- Defining processes to update the data at DR site
- Defining processes for business continuity preparedness and DR site maintenance
- Defining the drill for switchover between DC and DR

Deliverable D12:

Disaster Recovery Plan (DRP) and Business Continuity Plan for the CIDR

4.11 Providing Project Management Services for the CIDR, including implementation and post-implementation monitoring, validation, and certification of CIDR readiness to Go-Live

(i) The consultant shall be responsible for the project management of the CIDR implementation till the commissioning and Go-Live of the full-fledged CIDR facilities, and for a period of 3 months post-implementation and Go-Live of the CIDR.

(ii) The consultant shall report directly and shall be accountable to the UIDAI and shall establish methods for coordination between the MSP and other implementation partners (such as CIDR facilities construction agency). The consultant shall provide guidance to the MSP in terms of the work to be completed at each phase. The consultant shall be responsible for approving any mid-course corrections.

(iii) The consultant shall be responsible for monitoring adherence to timelines and shall ensure timely completion of work as per the Project Plan. The consultant shall assist UIDAI in overseeing the entire CIDR implementation.

(iv) The consultant shall also undertake on behalf of UIDAI the User Acceptance Testing (UAT) of the application software, by preparing test cases, test database, imparting training to the UIDAI-designated testers, documenting the defects, and troubleshooting its resolution with the MSP. The consultant shall guide the MSP in setting up the test environment (The test environment shall also form part of the Bill of Materials in the RFP for MSP)

(v) The consultant shall be responsible for certifying the completion of implementation and readiness of CIDR to Go-Live.

(vi) **The Program Manager, Project Manager (IT Systems) and Project Manager (Data Center Infrastructure) shall be available for the complete duration of the project till the end of the engagement, and the other proposed consulting resources shall be available as and when needed during the project management of the CIDR implementation. The consultant shall also bring onboard the necessary resources for providing project management services as per the requirements of the project.** ***The consultant shall propose the organization structure of the team proposed for providing Project Management Services including the proposed roles and number of***

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resources in Form Tech – 7B and the detailed approach for the same shall also be elaborated in the Technical Approach and Methodology.

(vii) The scope of work of the consultant, inter-alia, shall include the following:

- Review and validation of detailed project plan, including plan for procurement, installation, and commissioning, and Go-Live, prepared by the MSP/ implementation partners, through use of industry-standard project management and monitoring tools
- Scrutiny and verification of the complete Bill of Materials provided by MSP/ implementation partners, and providing necessary recommendations/ assistance to UIDAI for sign-offs on the same
- Verification and monitoring of the procurement, installation, configuration, and commissioning activities of the MSP/ implementation partners related to the various hardware, system software, and networking components of the CIDR, and providing the necessary management reports to UIDAI on these activities
- Verify the software agreements and licenses, including software updates, and upgrades are procured as per the Bill of Materials.
- Prepare Terms of Reference and engage an agency on behalf of UIDAI to undertake a comprehensive CIDR facilities assessment and site acceptance testing and to certify that the CIDR has been built as per the functional and technical requirements specifications in the RFP and Data Center industry standards.
- Reviewing the deliverables of MSP and recommending approvals on deliverables to UIDAI
- Design the parameters and methodology for load and stress testing of application software and proposed IT infrastructure conforming to attributes such as throughput and response times, scalability, integration, and interoperability, in an industry-standard testing lab environment. The consultant would not be responsible for procuring testing tools, if required.
- Prepare methodology, framework, and procedures for measurement of SLA parameters and user satisfaction, and recommend industry-standard tools for SLA monitoring
- Ensure knowledge transfer and training to the UIDAI-designated officials on the SLA monitoring tools

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- Prepare Terms of Reference and methodology for engaging 3rd Party auditors for undertaking system, networking. security audits, etc. The scope of work in this activity does not include preparation of the RFP for third-party agency, but includes preparation of a detailed Terms of Reference for the third-party agency. The UIDAI may decide on the modalities of engaging the third-party agency at an appropriate time.
- Verify and validate the Standard Operating Procedures put in place by MSP
- Identify detailed interfaces in consultation with the UIDAI. High level description of interfaces is discussed in the ""Creating a unique identity for every resident in India - Draft approach"".

Deliverable D13:

Project Management Reports, covering the following:

1) **Periodic project management reports provided on a weekly basis**
2) **Project implementation progress presentations to UIDAI**
3) **Review and validation the detailed project plans prepared by the MSP/ other implementation partners, and ensuring finalization of the same**
4) **Review and validation of all project deliverables prepared by the MSP/ other implementation partners, for conformance to RFP requirements, strategic control, ISMS security controls, SLA measurement tools, etc., and ensuring finalization of the same.**
5) **Acceptance testing methodology and procedures for the complete CIDR system**
6) **Manage the CIDR facilities assessment and site acceptance testing, and certification**
7) **Certification of CIDR readiness to Go-Live**
8) **Terms of Reference (TOR) for selection of agency for 3rd party audits.**

5. Deliverables and Timelines

The deliverables for the consultant and the corresponding timelines are:

Deliverable No.	Deliverable	Timelines (in weeks)
D1	Programme Management Strategy, Components, Roadmap, and Implementation Plan	T + 6 weeks
D2	Strategy, Business Models. Business Cases, and Potential Revenue Streams for CIDR	T + 10 weeks
D3	Implementation Strategy and Implementation Roadmap for the CIDR	T + 12 weeks
D4	Overview of Functional and Technical Solution of the CIDR, as input to the DPR	T + 12 weeks
D5	Functional and Technical Requirements Specifications for the non-IT (physical) infrastructure of the CIDR	T + 20 weeks
D6	Functional and Technical Requirements Specifications for the IT systems of the CIDR	T + 20 weeks
D7	Detailed Project Report (DPR) for implementation of the CIDR	T + 14 weeks
D8	Request for Proposals (RFPs): 1) RFP 1: Selection of Data Center Construction Agency to design, construct, and commission the CIDR facilities (physical infrastructure) 2) RFP 2: Procurement of interim co-location facilities for the CIDR 3) RFP 3: Selection of Managed Service Provider (MSP) to implement, and manage the CIDR	T + 24 weeks
D10	Risk Management Strategy and Plan for the CIDR	T + 24 weeks
D11	Information Security Plan and Policies for the CIDR	T + 24 weeks
D12	Disaster Recovery Plan (DRP) and Business Continuity Plan for the CIDR	T + 24 weeks
D9	Bid Evaluation Reports, consisting of: 1) Pre-qualification evaluation 2) Technical evaluation 3) Commercial evaluation	As per RFP timelines
D13	Project Management Reports	Based on project implementation progress

T is date of Project Kick-off Meeting

Appendix A : Part B

Pre-bid Clarifications dated 04-Jan-2010

[Enclosed]

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RFP for UID CIDR Consultant - Pre-Bid Clarifications (Jan 04, 2009)

Introduction

This document provides clarifications sought by the bidders on the RFP for providing consultancy services to UIDAI for setting up of CIDR and selection of MSP

Clarifications have been provided for all the queries that were received in writing by the UIDAI.

The clarifications have been organized into individual worksheets as per the Sections in the RFP (as outlined below)

Section 2 - Clarifications to queries related to Bid Process and Instructions to Consultants

Section 3 - Clarifications to queries related to Pre-qualification Proposal formats

Section 4 - Clarifications to queries related to Technical Proposal formats

Section 5 - Clarifications to queries related to Financial Proposal formats

Section 6 - Clarifications to queries related to the Terms of Reference and Scope of Work

Section 7 - Clarifications to queries related to the Standard Contract

General - Clarifications to general queries

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Section 2 - Clarifications to queries related to Bid Process and Instructions to Consultants

Sl. No	Tender Section	Tender clause / provision no.	Existing Text of the clause/provision in the tender	Clarification/ modification sought	Clarification provided by UIDAI
1	Section-2	9.1	The Bidder may form a consortium to bid for the project only with a reputed and experienced company in the field of Data Center design (physical infrastructure) for formulating the functional and technical requirements specifications of the CIDR non-IT infrastructure	Will the consortium partner such as Data Center specialist would be eligible for bidding for MSP (Managed Service Provider)?	No. The consortium partner in consultancy assignment shall not be eligible for bidding as the MSP or as consortium partner in MSP tender
2	Data sheet Clause 3.3 (b) Page 22 of 132	Data sheet Clause 3.3 (b) Page 22 of 132	The estimated tenure of contract: Fixed price fixed term contract for a period of 3 years or for a period of 3 months post-implementation and Go-Live of the CIDR, whichever is later	Given the nature of project and the fact that there are several dependencies for Go-live of the system on eco-system stakeholders and their readiness, it is critical that we define a definitive period for the project and do not leave it dependent on Go-live of the system From a consulting firm's perspective this uncertainty has significant financial implications and therefore we propose that the implementation phase post 3 years be taken under separate commercial arrangement. Accordingly the bidder must be request to propose fee in the following format; 1 Fixed fee for 3 years 2 Monthly fee post 3 years For the purpose of bid evaluation the Fixed Fee for a period of 3 years along with a multiplying factor for mothly fee should be used. Fixed Fee + [Monthly Fee * (12)] - assumption that the project might be extended by 12 months It is critical that the monthly fee post 3 years is also considered in evaluation as bidders do not quote higher amounts in the form of monthly fee	The UIDAI expects the CIDR to be fully functional within 3 years. However, in the event of the CIDR not being ready within 3 years, due to any unforeseen circumstances beyond the control of the UIDAI and the consultant, the UIDAI may choose to continue the support of the consulting firm. The payment to the consultant for the extended support period shall be based on the costs provided by the consultant in the Financial Proposal Form FIN-3, and shall also take into account any discounts proposed by the consultant in the Financial Proposal The referred text in Para 3.3 (b) of the Part II - Data sheet, has been modified and should be read as follows. "The estimated tenure of contract: Fixed price fixed term contract for a period of 3 years"
3	Clause 9 consortium Partner Requirement Page 20 of 132	Clause 9 consortium Partner Requirement Page 20 of 132	The Consortium partner must have completed atleast 1 consultancy assignment in formulating functional and technical specifications of the physical infrastructure of a Tier III/ above Data Center including infrastructure facilities such as civil, electrical, mechanical systems, etc., with a consultancy value of atleast Rs 50 lakhs	Given the fact that some of the well reputed and established Data Centre companies themselves would like to form a consortium with the consulting firm (with clear intention of NOT to bid for downstream business), would request the criteria also accommodate the scenario wherein large Data Centres established by such companies should also be considered as valid experience. We request the clause be changed to. a) The Consortium partner must have completed atleast 1 consultancy assignment in formulating functional and technical specifications of the physical infrastructure of a Tier III/ above Data Center including infrastructure facilities such as civil, electrical, mechanical systems, etc., with a consultancy value of atleast Rs. 50 lakhs OR **b) The Consortium partner (ONLY in the event of a Data Centre company) must have setup atleast 2 datacentres of atleast 2,000 sq ft. each with Tier III classification (Please not captive Data Centres setup for a companies own use shall not be considered for this criteria)**	The Clause 9.1 (Page 20) on Consortium Partner requirement is modified as below 9.1 The Bidder may form a consortium to bid for the project only with a reputed and experienced company in the field of Data Center design (physical infrastructure) for formulating the functional and technical requirements specifications of the CIDR non-IT infrastructure a) The Consortium partner must have completed atleast 1 consultancy assignment in formulating functional and technical specifications of the physical infrastructure of a Tier III/ above Data Center, including infrastructure facilities such as civil, electrical, mechanical systems, etc., with a consultancy value of atleast Rs 50 lakhs OR b) The Consortium partner (ONLY in the event of a Data Centre company) must have setup atleast 2 datacentres of atleast 2,000 sq ft. each with Tier III classification (Experience in setting up captive Data Centres for a company's own use shall not be considered for this criteria)

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4	Clause 1 14 Eligibility of Sub-Consultants Page 10 of 132	Clause 1 14 Eligibility of Sub-Consultants Page 10 of 132	The consultant may associate with individual experts and/ or form a consortium with other consultants at the time of submission of proposal with. The consultant may form consortium with other consultants and under such circumstances each member of the association of consultant shall be evaluated as per Para 9 1 Each member of the association of consultant shall be considered for evaluation purpose However the Employer shall deal with only the lead member of the association of the consultant for the purpose of this assignment Although the contract shall be signed by all the members of the associations of the consultants the lead member of the association of the consultant shall be responsible and liable to the Employer for every aspects of their proposal, contract etc	Can a Company be a sub-consultant to the Prime Bidder or it can ONLY be individual experts?	A company/ individual experts can be a sub-consultant to the Prime Bidder
5	Clause 1 3 Page 21 of 132	Clause 1 3 Page 21 of 132	Proposal (Pre-qualification Proposal, Technical Proposal and Financial Proposals in three separate sealed envelopes EMD and Tender Fee) must be submitted no later than the following date and time. Date 11-01-2010 Time 1700 hrs	Given the importance of this project and the rigour required to put across a strong technical bid with required experts and, approach we would request UIDAI to extend the submission timeline. **Would request the timeline to be extended to January 29, 2010**	Proposal (Pre-qualification Proposal, Technical Proposal and Financial Proposals in three separate sealed envelopes EMD, and Tender Fee) must be submitted no later than the following date and time: Date: 15-01-2010 Time: 1700 hrs
6	Clause 5 6 Page 25 of 132	Clause 5 6 Page 25 of 132	The formula for determining the technical score is as follows. St = (100 x T / Tm), in which St is the normalized technical score, Tm is the highest technical score and T is the technical score of the proposal under consideration. The formula for determining the financial scores is the following: Sf = 100 x Fm / F, in which Sf is the financial score Fm is the lowest price and F the price of the proposal under consideration The weights given to the Technical and Financial Proposals are: **T = 0.75; and P = 0 25** Stech = Total points obtained for the above criteria (i) (ii), (iii) **The minimum technical score Stech required to pass is: 70 Points**	Given the National importance and strategic nature of this project, the quality and experience of manpower deployed on this project shall be crucial and critical for the success of this project. The same was even emphasized during the pre-bid meeting by UIDAI authority In this context given that each of the experts sought would have to be best in the industry and could come from any where across the globe, the experience required would come at a significant cost. **In light of the above we would request UIDAI to evaluate higher weightage to technical i.e. 90% as against current 75%.** **Further would also request the technical cut-off score to be increased to 80 as against current 70**	**The Clause remains unchanged.**
7	5 1 on page 23	5 1 on page 23	The Bidder must have completed atleast 2 consultancy assignments of a similar nature in design of IT systems (application software and)	Should the credentials requested for pre qualification and as part of the technical proposal be completed or could it include projects that are on going and where relevant scope of work has been completed?	The relevant scope of work should have been completed. However, the bidder must furnish a declaration/ letter from client to this effect

8	Instructions to Consultants (Part 1)	1 14	The consultant may associate with individual experts and/ or form a consortium with other consultants at the time of submission of proposal with The consultant may form circumstances each member of the association of consultant shall be evaluated as per Para 9.1 Each member of the association of consultant shall be considered for evaluation purpose However the Employer shall deal with only the lead member of the association of the consultant for the purpose of this assignment. Although the contract shall be signed by all the members of the associations of the consultants, the lead member of the association of the consultant shall be responsible and liable to the Employer for every aspects of their proposal, contract etc	It is understood that individual experts will form part of the bidders team and may or may not be an employee However he or she will have a clear teaming agreement with the bidder. Please Clarify	Correct. Individual experts can be outside the consultant firm but a teaming agreement must be furnished along with the proposal
9	Instructions to Consultants (Part 1)	3 4(b)	Consultants should be able to substantiate the experience claimed in their proposal and must submit Letter of Award / Copy of Contract for all assignments mentioned in the proposal	As most clients have NDA clauses, it is difficult to submit PO/Contract copies and exact value of contract However, in lieu of same Client experience letters along with statements like " exceeding the value of " should be allowed.	A range has been specified in the proposal format and the same may be adopted However the bidder should furnish a certificate from the auditors including the name and address of the client, the value range of the PO and a brief description of the nature of the work. Self certification by the bidders shall not be accepted in any manner.
10	Instructions to Consultants (Part 1)	5 4	Financial proposals of only those firms who are technically qualified shall be opened publicly on the date & time specified the Data sheet, in the presence of the Consultants' representatives who choose to attend The name of the Consultants, their technical score (if required) and their financial proposal shall be read aloud.	Please clarify the statement	No clarification is required
11	Instructions to Consultants (Part II)	1 3	Submission date of 11.01.2010	The time period for responding to a complex assignment of this nature is short and we make a sincere request for an extension and the deadline be please revised to/ changed to 5th February,2010	Pls refer to Sl.No 4 above
12	Instructions to Consultants (Part II)	3 3(b)	The estimated tenure of contract: Fixed price fixed term contract for a period of 3 years or for a period of 3 months post-implementation and Go-Live of the CIDR, whichever is later	Many activities are not in consultants control viz., DPR approval, Infrastructure roll out, MSP set up etc Hence, the contract period of 3years or for a period of 3months post Go-Live implementation needs to be changed to a Fixed duration/capped.	Please refer to Sl. No 2 above
13	Section 5 1, 5 3	Page 23, 24		Can we use our global capabilities/capability statement and experience to meet the eligibility criteria and/or to support our response?	The pre Qualification criteria has to be complied with to be eligible to participate in the RFP
14	Section 5 1, 5 3	Page 23 24		What is the definition or scope of "Resident" that will be required to be issued UID? Does it include "visitors" and/or people coming to India on a "Work Visa"?	No clarification is required.

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15	Section 2	1 8 (Page 7-8	A firm that has been engaged by the Employer to provide goods, works or services other than consulting services for a project, and any of its affiliates, shall be disqualified from providing consulting services related to those goods, works or services. Conversely, a firm hired to provide consulting services for the preparation or implementation of a project, and any of its affiliates, shall be disqualified from subsequently providing goods or works or services other than consulting services resulting from or directly related to the firm's consulting services for such preparation or implementation	There is a set of conflict of interest clauses on page 7 and 8 which suggests that if a consultant does this, he cannot participate in the RFPs that he will help UIDAI create. Is this understanding correct?	Correct. Para 1 8 in Section 2 is self explanatory
16	2- Instructions to Consultant	1.8-Conflict of Interest	1 8.1	Incase Company engaged in current assignment of Consulting also has a specialisation in selling hardware of their own brands, will they be allowed to bid in CIDR and MSP after the RFP is out.	Please refer SI. No 1 above
17	Instruction to Consultants	4	Please inform us upon receipt: whether you will submit a proposal alone or in association as a Joint Venture confirming joint and several liability or as Sub-consultants	Do we need to inform about JV/consortium now or as part of the proposal response?	Joint Venture for submitting the bid or bid with associated consultants is not permissible. The relevant clauses / Sections / Forms etc. have been modified accordingly. However the bidder may engage a sub consultant to hire the personnel / manpower required. A teaming agreement in such a situation is required to be furnished
18	Instruction to Consultants	9	The Bidder may form a consortium to bid for the project only with a reputed and experienced company in the field of Data Center design (physical infrastructure) for formulating the functional and technical requirements specifications of the CIDR non-IT infrastructure	Can a consortium partner in this assignment eligible to participate as consortium partner in MSP tender with prime bidder?	Please refer to answer at SI No. 1
19	Section 2	1 8 1 (i)	Conversely a firm hired to provide consulting services for the preparation or implementation of a project and any of its affiliates, shall be disqualified from subsequently providing goods or works or services other than consulting services resulting from or directly related to the firm's consulting services for such preparation or implementation	In a situation where a company "A" has shareholding in company "B" (**B is NOT a subsidiary of A**). If company A or B is selected as consultant, can the other be selected as MSP	If Company "A" has a majority shareholding in Company "B" and if the management of the company is same, the clause relating to conflict of interest shall be attracted
20	Section I	Clause 1 8	Conflict of Interest	Are all projects in the UID come in this Purview of Conflict of Interest?	Yes
21	section 2	1 14	The consultant may associate with individuals and /or form consortium with. The may form consortium with other consultants and under such circumstances each member of the association of consultants shall be evaluated as per Para 9 1.	the evaluation criteria given in Para 9 1 is ONLY FOR a data centre partner The spread of the assignment requires experts from a plethora of fields. In the present scheme of evaluation the addition experts on board are not factorised It is requested that a clear criteria for additional experts may be built into the technical evaluation	The evaluation criteria provided in the RFP shall be followed.

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22			**Conflict of Interest:** Employer requires that consultants shall provide professional, objective and impartial advice and at all times hold the Employer's interests paramount, strictly avoid conflicts of interest with other assignments or their own corporate interests and act without any consideration for future work	We would like to clarify that PwC is already in the business of providing similar advisory services to its clients and shall continue to do so. It is presumed that this clause shall not be interpreted in any manner to restrict PwC from providing such services. Please confirm	The clause on conflict of interest shall not be attracted on ongoing projects of the bidder. Only the downstream projects emanating from UIDAI consultancy work shall covered by this clause
23			**Conflicting activities:** A firm that has been engaged by the Employer to provide goods, works or services other than consulting services for a project, and any of its affiliates, shall be disqualified from providing consulting services related to those goods, works or services. Conversely, a firm hired to provide consulting services for the preparation or implementation of a project, and any of its affiliates, shall be disqualified from subsequently providing goods or works or services other than consulting services resulting from or directly related to the firm's consulting services for such preparation or implementation.	We believe there should be an outer time limit prescribed for the survival of the conflict clause. Request UIDAI to please specify the same	The bidder shall not be eligible for participating in any downstream work which arises as a result of this consultancy assignment for a period of twelve months from the end of the contract regarding this RFP
24			**Conflicting assignments:** A Consultant (including its Personnel and Sub-Consultants) or any of its affiliates shall not be hired for any assignment that, by its nature, may be in conflict with another assignment of the Consultant to be executed for the same or for another Employer. For example, a Consultant hired to prepare Terms of Reference for an assignment should not be hired for the assignment in question.	Please clarify whether the restriction should be restricted only to the team members working directly on this project.	The clause is applicable to the Consultant firm (including its Personne and Sub-Consultants) and not just to the team members
25			Proposal (Pre-qualification Proposal, Technical Proposal and Financial Proposals in three separate sealed envelopes, EMD, and Tender Fee) must be submitted no later than the following date and time Date: 11-01-2010 Time: 1700 hrs	Due to Christmas and New Year holidays, the consultants might not be able to present their best team and effort in the proposal. We request for an extension of the submission deadline by atleast a week to enable the Consultants submit their best bids.	Pls refer to Sl No 4 above
26			The formula for determining the financial scores is the following:	Taking into account the magnitude of this assignment we would suggest you to kindly reconsider the pricing formula. We would like to suggest that pricing could involve combination of two approaches: For the first part i.e. till the selection of MSP, there could be a lump sum price to be quoted by the bidding consultants. Beyond that for programme management there could be monthly rates for the resources allocated to the project. This would allow UIDAI the option to choose the appropriate number of resources required for programme management as and when required	The evaluation methodology remains unchanged.
27	Section 2	5.2 on Page 15	"... The authorization shall be in the form of a written power of attorney accompanying the Pre-Qualification, Technical and Financial Proposals or in any other form demonstrating that the representative has been duly authorized to sign...."	We understand that one set of PoA in original would suffice, which would be enclosed with the Pre-Qual Proposal. And three original sets are not required. Please confirm.	Yes , Only one set of PoA is needed

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28	Section 2	9.1 on Page 20	"... This consortium partner must have completed at least 1 consultancy assignment in formulating functional and technical specifications of the physical infrastructure of a tier III/above Data Centre, including infrastructure facilities such as civil, electrical, mechanical systems, etc., with a consultancy value of at least Rs. 50 lakhs. .."	We would request you to consider and allow in-house/internal projects as well under this criterion, on production of a self certification / undertaking.	The condition / clause remains unchanged
29	Section 2 Part II	1.3 on Page 21	Proposal (Pre-qualification proposal, technical proposal and financial proposals in three separate sealed envelopes, EMD and Tender Fee) must be submitted no later than the following date and time: Date: 11-01-2010 Time, 1700 hrs	We request extension of last date of submission upto three weeks from the date of issuance of final set of clarifications/corrigendum.	Pls refer to Sl No 4 above
30	Section 2 Part II	3.3(b) on Page 22	The estimated tenure of the contract; Fixed price fixed term contract for a period of 3 years or for a period of 3 months post-implementation and Go-Live of the CIDR, whichever is later	We would request you to kindly provide more clarity on the estimated tenure since this can have a significant bearing on the consultant's time and effort requirement.	Please refer to Sl. No. 2 above
31	Section 2 Part II	5.1 (4 & 5) on Page 23	The Bidder must have completed at least 2 consultancy assignments of a similar nature in design of IT systems (application software and hardware), and preparation of RFP and bid process management for selection of System Integrator / Managed Service Provider in a large Enterprise/Government environment with a consultancy value of at least Rs. 1 Crore each. The Bidder must have completed at least 1 consultancy assignment involving Project Management of a large Enterprise / Government IT implementation with a consultancy value of at least Rs. 1 Crore.	Since a high number of advisory projects (especially, in government domain) are long duration engagements, we request that engagements/ assignments with "work in progress" status wherein the cited/required component of the work has been completed may please be allowed to be presented against this requirement. Please confirm.	Please refer Sl. No 6 above
32	Section 2 Part II	Page 23	The list of mandatory supporting documents to be submitted are (4) Work order / Completion certificate / Client certificate for previous experience cited in Pre-Qual Form -2 B and C to 'Design of IT systems, RFP preparation & Bid Process Management for selection of System Integrator / Managed Service Provider' and 'Project Management of IT implementation' (mandatory to provide value of consulting assignment)	Since some clients do not generally issue certificates which may be shared further in proposals etc., it is requested that for such cases the Bidder may please be allowed to submit the credential/engagement details with Order Copy and Client Details and UIDAI may check the veracity of the experience directly from the Client if required.	Consultants should provide all the details (including documentary evidence like copy of work order/ contract document/ completion certificate) from customer. Please also refer to answer at Sl. No. 6
33	Clause 5.3 (a)	Page 24	Criteria, sub-criteria and point system for the Detailed Evaluation of Technical Proposals are (i) Previous Experience	Since, a high number of advisory projects (especially in government domain) are long duration engagements, we request that engagements/ assignments with "work in progress" status wherein the cited/required component of the work has been completed may please be allowed to be presented against this requirement. Please confirm.	Please refer Sl. No 6 above
34	Section 2	Page 25 Clause 5.6	The formula for determining the financial scores is the following: Sf = 100 x Fm / F, in which Sf is the financial score, Fm is the lowest price and F the price of the proposal under consideration.	Given uncertainty especially in the out years, will the authority consider a fixed price staged approach for pricing estimates. The rolling wave phased approach could include scoring criteria to better estimate a more realistic price and mitigate risk associated with overruns and budget shortfalls. (example: Once stakeholder groups are 100% identified outreach activities can be better estimated, Once business model/revenue models are baseline pricing standard deviations can be minimized)	The clause remains unchanged

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Section 3 - Clarifications to queries related to Pre-qualification Proposal formats

Sl No	Tender Section	Tender clause / provision no.	Existing Text of the clause/provision in the tender	Clarification/ modification sought	Clarification provided by UIDAI
1	Pre-Qual Form 1 (Page 27) & Form Tech 1 (Page33)	Pre-Qual Form 1 (Page 27) & Form Tech 1 (Page33)	We are submitting our Proposal in association with as a Joint Venture confirming joint and several liability or as sub consultants	The nature of association could be other than Joint Venture or sub contracting – it could be a consortium backed by a letter of association specifically to execute and discharge specific responsibilities under this project. In such a case the use of the term 'Joint Venture' may be considered to be replaced by consortium	Please refer to answer at Sl No 17 in Section 2.
2	Pre Qualification Form 2 – Form A 3 Page 29	Pre Qualification Form 2 – Form A 3 Page 29	Other Relevant Information	Kindly clarify what is meant by other relevant information that needs to be provided under Form A3. Financial Information – Bidder	The word other relevant information may be treated as deleted.
3	Section 3	On Page 26	Refer to Reference Paragraph 3 4 of the Data Sheet for format of Pre-Qualification Proposal to be submitted. and paragraph 3 4 of Section 2 of the RFP for Standard Forms required and number of pages recommended.	The aforementioned paragraph does not mention any restriction on the number of pages for responding to Pre-Qualification Criteria. Kindly clarify	No restriction has been kept on number of pages

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Section 4 - Clarifications to queries related to Technical Proposal formats

Sl No	Tender Section	Tender clause / provision no.	Existing Text of the clause/provision in the tender	Clarification/ modification sought	Clarification provided by UIDAI
1	Clause C - Formats Page 37 of 132	Clause C - Formats Page 37 of 132	Please provide citations of ONLY 3 relevant completed consultancy projects (with consultancy cost above Rs. 25 lakhs) covering Design of Non-IT Infrastructure (Civil, Mechanical and Electrical) for a large DC/ DRC and preparation of RFP (covering the Scope of Work as defined in this RFP).	In continuation with change requested for consortium partner the clause be changed to: Please provide citations of ONLY 3 relevant completed consultancy projects (with consultancy cost above Rs. 25 lakhs) covering Design of Non-IT Infrastructure (Civil, Mechanical and Electrical) for a large DC/ DRC and preparation of RFP (covering the Scope of Work as defined in this RFP). OR **In the event of a Data Centre company, provide ONLY 3 relevant completed projects covering design and implementation (with data centre size of atleast 2,000 sq. ft.) of Non-IT Infrastructure (Civil, Mechanical and Electrical) for a large DC/ DRC and preparation of RFP (covering the Scope of Work as defined in this RFP).**	Form C on Page 37 - The relevant text may be read as follows: Please provide citations of ONLY 3 relevant completed consultancy projects (with consultancy cost above Rs. 25 lakhs) covering Design of Non-IT Infrastructure (Civil, Mechanical and Electrical) for a large DC/ DRC and preparation of RFP (covering the Scope of Work as defined in this RFP) OR In the event of a Data Centre company, provide ONLY 3 relevant completed projects covering design and implementation (with data centre size of atleast 2,000 sq. ft.) of Non-IT Infrastructure (Civil, Mechanical and Electrical) for a large DC/ DRC and preparation of RFP (covering the Scope of Work as defined in this RFP).
2	Pre-Qual Form 1 (Page 27) & Form Tech 1 (Page33)	Pre-Qual Form 1 (Page 27) & Form Tech 1 (Page33)	We are submitting our Proposal in association with: as a Joint Venture confirming joint and several liability or as sub consultants	The nature of association could be other than Joint Venture or sub contracting – It could be a consortium backed by a letter of association specifically to execute and discharge specific responsibilities under this project. In such a case the use of the term 'Joint Venture' may be considered to be replaced by consortium	Please refer to answer at Sl. No 17 in Section 2
3	Form Tech – 7A Staffing Schedule for Consultancy Agreement 1	Form Tech – 7A Staffing Schedule for Consultancy Agreement	3. For part time resources/deployment, please refer to Section 7 (pages 99 – 103)	There is no corresponding section 7 on pages 99 – 103. Kindly clarify	The bidder can ignore the page reference made here
4	Section 4	On Page 32	Refer to Reference Paragraph 3.4 of the Data Sheet for format of Pre-Qualification Proposal to be submitted, and paragraph 3.4 of Section 2 of the RFP for Standard Forms required and number of pages recommended	The aforementioned paragraph does not mention any restriction on the number of pages for responding to Technical Proposal. Kindly clarify	No restriction on number of pages

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5	Section 4	Form Tech-2 B, C, D & E on Pages 36, 37, 38 & 39	"... Please provide citations of only 3 relevant completed consultancy projects (with consultancy cost above Rs. 50 lakhs) covering design of IT system (application software and hardware) in a large enterprise / government environment, covering the scope of work as defined in this RFP ..." "... Please provide citations of only 3 relevant completed consultancy projects (with consultancy cost above Rs. 25 lakhs) covering design of non-IT infrastructure (civil, mechanical and electrical) for a large DC/DRC and preparation of RFP (covering the scope of work as defined in this RFP). " " .. Please provide citations of only 2 relevant completed consultancy projects (with an overall project consultancy cost above Rs. 50 lakhs) covering bid process management and selection of Managed Service provider for a large enterprise / government IT implementation project..." " .. Please provide citations of only 2 relevant completed	Since a high number of advisory projects (especially in government domain) are long duration engagements, we request that engagements/ assignments with "work in progress" status wherein the cited/required component of the work has been completed may please be allowed to be presented against this requirement. Please confirm.	The relevant scope of work should have been completed. However, the bidder must furnish a declaration/ letter from client to this effect, to make the project eligible for evaluation
6	Section 4	Form Tech-7A, Page 45	"Staff input in weeks (in the form of a bar chart)²" 2. Weeks are counted from the start of the assignment.	Since the duration of the project is 3 years, i.e. 156 weeks, it would be difficult to provide Form Tech - 7A in the format as given in the RFP. Hence, we request that the format may be changed to provide staff input in months, instead of weeks	Accepted. The relevant text is modified as below "Staff input in months for the entire duration of the project (in the form of a bar chart)²" 2. Months are counted from the start of the assignment.

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Section 5 - Clarifications to queries related to Financial Proposal formats

Sl No	Tender Section	Tender clause / provision no.	Existing Text of the clause/provision in the tender	Clarification/ modification sought	Clarification provided by UIDAI
1	Section 5	Form FIN-3 Breakdown of Remuneration, Page 54	Table provided in Form FIN-3	Should the staff-rates be provided for all the resources to be deployed for the entire duration of the project	Yes. The table shall include the staff-rates for ALL the resources proposed to be deployed during the entire duration of the project, including the resources proposed for project management services.
2	Section 5	Form FIN-3 Breakdown of Remuneration, Page 54	Column - Name[2] 2 Professional Staff and Support Staff should be indicated individually.	We may not be able to provide the names of all the resources proposed for providing project management services, since this activity is scheduled to begin at a later stage in the project. Is it possible to propose the designations of the planned resources as per the Form Tech - 7B - Staffing Plan for Project Management Services?	Accepted. The bidders may provide designation/ position/ role for each resource planned to be deployed for providing project management services (as given in Form Tech - 7B - Staffing Plan for Project Management Services)

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Section 5 - Clarifications to queries related to Terms of Reference and Scope of Work

Sl. No	Tender Section	Tender clause / provision no.	Existing Text of the clause/provision in the tender	Clarification/ modification sought	Clarification provided by UIDAI
1	Section 6 Terms of Reference	Detailed Scope of Work – 4.1 [ii]	"Considering the scale of the initiative, there will be overwhelming demands on the service delivery infrastructure of the UID project to deliver the UID services to a myriad range of stakeholders. So while developing the programme plan, the consultant will have to spend time with the UIDAI management and technology team, and other stakeholders to understand the future directions of the UID initiative and align various project components accordingly."	Section 4.1 [ii] says that the Consultant has to spend a considerable time with the UIDAI management & technology team for developing the program plan. Are there any common meetings planned [for all the bidders] to provide this information? – so as to be included in the RFP response	No common meetings, other than the pre-bid conference have been planned during the bid process [for all the bidders]. The text refers to the scope of work of the consultant during project execution and it is responsibility of the consultant to complete this activity.
2	Section 6 Terms of Reference	Deliverables and Timelines – 5	"The deliverables for the consultant and the corresponding timelines based on the scope of work as detailed above are…."	The deliverables states T+ 24 weeks, but the bid is requested for 3 years under Fixed price. If the additional 2.5 years is for implementation phase, how the extension will be handled if the implementation is run over than 3 years?	Please refer to Worksheet - Section 2 Sl. No 2 of this document
3	Section 6	4.11	Providing Project Management Services for the CIDR, including implementation and post-implementation monitoring, validation, and certification of CIDR readiness to Go-Live	Please clarify the meaning of Go Live	Please refer to Worksheet - Section 2 Sl. No 2 of this document
4	Clause 5 Deliverables and Timelines Page 85 of 132	Clause 5 Deliverables and Timelines Page 85 of 132		Some of the timelines for the project look a bit challenging. We would therefore UIDAI to keep the outer limit of deliverables to T + 24 weeks and give the flexibility to the consultant to internally re-arrange the timelines. In specific D3, D4, D7 look a bit challenging in existing timeframes	The clause remains unchanged
5	Clause 4.6 – (3) Page 74	Clause 4.6 – (3) Page 74	RFP 3: Selection of Managed Service Provider (MSP) to implement, and manage the CIDR	As we understand, the initial database of citizens shall be created from data existing with various partner agencies. In most of these cases, good amounts of biographic data may be available. Will the responsibility of migration of this data be entrusted with the Managed Service Provider or would the partner agencies provide data as required by UIDAI?	i) This information is not relevant for the current consulting engagement. ii) Yes. Data migration for the pilot implementation will be the responsibility of MSP in consultation with UIDAI.

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6	Last Para Page 57	Last Para Page 57	To implement this ambitious initiative, the UIDAI has devised a partnership approach that leverages the existing infrastructure of Government and private agencies across India.	From the point of understanding the full magnitude of the consulting engagement, we need to have an idea of the number of agencies who are proposed to be partnered with till the proposed "Go-Live" of the solution From a project management standpoint this will have significant impact due to the following reasons a. Readiness of the partner agencies to work back with UIDAI in making Go-Live possible within the envisaged timelines b. Complexity of their ICT environment to make such data/information sharing possible Also, an enlarged ecosystem of partners will significantly increase project management complexities. In light of this, we would request for some more clarity on the initial list of Government and Private agencies with whom partnerships are proposed till Go-Live	The document - "Creating a unique identity for every resident in India - Draft approach" (available on www.uidai.gov.in) provides information on the list of agencies targeted for partnership
7	NA	NA	Definition of Go-Live of the CIDR	a. How will Go-Live of the CIDR be defined in the context of the strategy to have a pilot Go-Live prior to the fully prepared CIDR infrastructure going live? b. In case there will be two separate RFPs for interim co-location facilities and the CIDR, will the MSP be in charge of moving from interim location to the final CIDR? As you would appreciate, we are looking at forming a large portfolio of interfaces with both organizations which will contribute data and those which will use the data. From an interfacing standpoint, what would be the key interfaces whose establishment will define the final Go-Live of the solution?	a. Go-Live of the CIDR refers to the complete full-fledged CIDR infrastructure going live and does not refer to Go-Live of the pilot implementation. b. Yes, MSP will be responsible for moving from interim co-location facilities to the full-fledged CIDR DC and DR facilities c. High level description of intefaces is discussed in the "Creating a unique identity for every resident in India - Draft approach". However, the consultant is expected to identify detailed interfaces in consultation with the UIDAI.
8	6. Terms of Reference, 2. Functions of the UIDAI, Page No. 60 of 132	6. Terms of Reference, 2. Functions of the UIDAI, Page No. 60 of 132	a. Since a financial inclusion platform can effectively use the UID services in order to bring about secure authentication for micropayments and delivery of financial services, there is a need to support several registrars (such as NREGA, IAY etc) who will need to do direct payments to residents	Please define the role of registrar and its scope. Is it confined to the registration of resident or does it extend further beyond to include delivery of (UID-authenticated) public service delivery like making payments under listed schemes	The document - "Creating a unique identity for every resident in India - Draft approach" (available on www.uidai.gov.in) provides information on the role of Registrars and Enrolling Agencies.

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9	6: Terms of Reference 4 Detailed Scope of Work, Page No: 64 of 132	6 Terms of Reference 4 Detailed Scope of Work, Page No. 64 of 132	4.1 Planning and formulating the overall Programme Management Strategy; identifying Components preparing a Roadmap and Implementation Plan for the UID project	i. Please provide information on organization – (Functional, geographic setup) of UIDAI as relevant for the project given its nationwide coverage ii. Please provide information on the mechanism and role of stakeholder from UIDAI on Project Management & Review (e.g. Strategic Direction, Course Correction, Review and Acceptance of Deliverables, Status Update, Project Co-ordination) iii. Are there any planned targets on UID enrolment and authentication for each year (including the envisaged pilot) as part of project milestones?	i. Please refer to the information available on www.uidai.gov.in for the functional and geographical setup of the UIDAI ii. The UIDAI management along with the PMU will provide the necessary Project Management and Review for the consulting engagement iii. UIDAI's initial model is discussed in the document - "Creating a unique identity for every resident in India - Draft approach" (available on www.uidai.gov.in).
10	6. Terms of Reference, 4. Detailed Scope of Work, Page No 64 of 132	6 Terms of Reference, 4 Detailed Scope of Work, Page No: 64 of 132	(iii) The programme plan should provide an integrated view of the major events, activities, deliverables, and dependencies within the individual projects that comprise the UID initiative, together with the planned completion dates, progress indicators and other information. The plan should also provide a connected-view to other initiatives (related or linked) in the UID ecosystem that may impact the direction or outcomes of the project	Please provide the list or an indication of other related or linked initiatives in the UID ecosystem	As part of the consulting assignment, the consultant is expected to understand linked initiates within the UIDAI
11	6: Terms of Reference, 4 Detailed Scope of Work, Page No. 65 of 132	6 Terms of Reference, 4 Detailed Scope of Work, Page No: 65 of 132	4.2 Identifying and developing the Strategy, Business Models, and Business Cases for potential revenue streams from the CIDR	i. Please mention the timelines for the establishment of the Legal framework for adoption of UID being envisaged by Govt. of India. ii. How will the dependencies of the Strategy, Business Models to be developed on the legal framework and changes required thereof, be addressed during the course of the project and also its impact on timely acceptance of the related deliverables	i. This information is not relevant to referred clause. ii. If the legal framework necessitates changes in the Strategy and Business Models, the consultant is expected to modify/ update the same.
12	6 Terms of Reference, 4 Detailed Scope of Work, Page No. 65 of 132	6. Terms of Reference, 4 Detailed Scope of Work, Page No: 65 of 132	4.2 Identifying and developing the Strategy, Business Models and Business Cases for potential revenue streams from the CIDR	i. The proposed activity may entail undertaking primary and secondary research to identify evaluate and validate aspects like volume estimates, revenue models, success and learning's from prior initiatives. Please confirm if UIDAI shall be making available necessary information or assist in collecting information from third party agencies as may be required ii. Does the project entail study of existing enrolment practices of Govt (e.g. PAN, Passport, and Rational Card) and private sector (Digital Certificate registration, Insurance and loan application etc)? If yes, please indicate the assistance that UIDAI may provide in interacting with the related agencies	i. UIDAI will share all available information such as volume, revenue/cost of enrolment with the selected consultant, and will also facilitate in obtaining information as necessary for this activity ii. The activity may need interaction with departments for which UIDAI will provide necessary support.

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13	6 Terms of Reference, 4 Detailed Scope of Work, Page No 68 of 132	6 Terms of Reference, 4 Detailed Scope of Work, Page No. 68 of 132	4 4 1 Overview of the Functional and Technical Solution of the CIDR, as input to the CIDR	Given the importance and implications of the proposed initiative, the envisaged solution may require establishment of UIDAI-owned proprietary security algorithms for data encryption that may require assistance for leading technology research labs in public or private sector Please confirm that the same shall not be responsible for provision of such algorithms or specific guidelines as part of the deliverables	The query does not appear relevant to the context of the corresponding RFP clause. The overview of the functional and technical solution of the CIDR is needed as an input into the overall DPR for the CIDR
14	6. Terms of Reference, 4. Detailed Scope of Work, Page No. 71 of 132	6 Terms of Reference, 4 Detailed Scope of Work, Page No: 71 of 132	(ii) In order to assess the technical implications of the CIDR, the UIDAI is planning to implement a Proof-of-Concept (PoC)/ Pilot solution The learning's from the PoC/ Pilot shall be dove-tailed into the full-fledged CIDR solution that will be implemented by the Managed Service Provider (MSP). The consultant is required to interact and work closely with the PoC team, PMU, and other stakeholders of the UIDAI while formulating the detailed functional and technical requirements specifications for the CIDR IT systems	i Please provide more details on pilot - information on scope, expected outcomes/result areas, entities involved timelines, etc ii Please clarify the role of consultant in the pilot as part of the proposed contract arrangement apart from what is mentioned in the reference text of RFP	As stated, UIDAI will provide results of the PoC and pilot that should be used in formulating requirements for MSP. The consultant is required to receive and understand the output of the Poc/Pilot from concerned parties. The consultant is not expected to document learning from PoC/Pilot by analyzing PoC and Pilot results
15	6 Terms of Reference, 4 Detailed Scope of Work. Page No. 73 of 132	6. Terms of Reference. 4. Detailed Scope of Work, Page No. 73 of 132	4 4 3 Functional and Technical Requirements Specifications for the IT systems of the CIDR	As part of functional and technical solution and specifications, please confirm if the consultant shall be providing specifications of generic external interface adaptors for connecting with external data bases and systems (e.g. PAN database of Income Tax Dept) and that the study of the specific external databases as and when they shall be finalized is out of the proposed scope	Yes.
16	6 Terms of Reference, 4 Detailed Scope of Work, Page No 83 of 132	6 Terms of Reference, 4 Detailed Scope of Work, Page No:83 of 132	Prepare Terms of Reference and engage an agency on behalf of UIDAI to undertake a comprehensive CIDR facilities assessment and site acceptance testing and to certify that the CIDR has been built as per the functional and technical requirements specifications in the RFP and Data Center industry Standards.	Please confirm if referred text indicates preparation of RFP, in addition to RFP1 RFP 2 and RFP3, to select the third party agency and that it shall also entail separate bid management for the same. If yes, please mention if UIDAI expects any deliverables specific to the state activities.	The scope of work in this activity does not include preparation of the RFP for third-party agency, but includes preparation of a detailed Terms of Reference for the third-party agency The UIDAI may decide on the modalities of engaging the third-party agency at an appropriate time.
17	Terms of Reference	Section 6, 1 Page 58 Of 132	Through this RFP, the UIDAI invites proposals from IT consulting firms to provide consultancy services for designing a programme management strategy and implementation roadmap for the UID project, formulating the strategy business models, and implementation roadmap for the Central ID Data Repository (CIDR) of the UID project; formulating the requirements & specifications for the CIDR, preparing the required RFPs, managing the bid processes, selecting a Managed Service Provider (MSP), and providing project management services for the implementation of the CIDR	It is understood that the business model and management strategy will be developed only for setting up of the MSP and is not for UID as an entity	i. The programme management strategy and the programme plan is for the complete UID project (which includes CIDR implementation as one of the critical programme components) ii. The business model is for the CIDR. The CIDR is essentially a service provider to the UIDAI and will provide services which include the processing of enrolment and authentication requests, based on the business model

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18	Terms of Reference	Section 6, 3, Page 63 Of 132	Planning and formulating the overall Programme Management Strategy; identifying Components; preparing a Roadmap and Implementation Plan for the UID project	UID project is understood as the project to set up of CIDR. Please clarify	No The establishment of the CIDR is a critical programme component in the overall implementation of the UID project. The CIDR is essentially a service provider to the UIDAI and will provide all related services
19	Terms of Reference	Section 6, 3, Page 63 Of 132	Identifying and developing Strategy, Business Models, and Business Cases for potential revenue streams from the CIDR	Are the agencies participating in the demand side identified or is it expected that the consultant will do so Can it be safely assumed that the demand side volumes will be estimated/targeted to build the business model/plan.	The UIDAI is currently in the process of identifying the deman generation aspects of the UID project. The consultant is also expected to consult and interface with the stakeholders in this activity.
20	Terms of Reference	Section 6, 3, Page 65 Of 132	Identify authentication of individuals is a process that costs government and private agencies hundreds of crores each year. The CIDR which will contain the central UID database plans to offer a range of identity authentication and verification services on a transaction fee basis, which will offset its long-term costs. The consultant shall identify and develop strategies through which innovative identity-based services and other value-added services can be offered by the CIDR; based on a business model.	Since there are many services where individuals are authenticated, it is suggested that the business model should be based on a identified agencies who would need such services. This is a very open scope and would be difficult to achieve in the time period mentioned in the RFPof 10 weeks, unless these agencies are clearly identified ALSO Please communicate the key stakeholders that the consulting team will need to interact with and which locations are they based in. Kindly provide a complete list of Registrars, Partners and Service Providers with locations. Kindly provide complete list with location of all of civil society groups and community networks including for rural women, tribal folks, and other hard-to-reach population segments to be addressed for the UID program.	The document - "Creating a unique identity for every resident in India - Draft approach" (available on www.uidai.gov.in) provides information on the list of agencies targeted for partnership. It also provides initial model and expected revenue sources
21	Terms of Reference	Section 6, 3, Page 63 Of 132	The business model should include the various types of revenue streams arising out of delivery of the proposed services from CIDR. The business cases should enable the UIDAI to objectively measure the expected revenues, expected costs, benefits, policy implications, and risks of the proposed business model	It is important to build a business model where infrastructure scales up as the business grows. The consultant should be made to design a model where the capex can be added as the operating revenues keep moving upwards. Yet to build a base model a known revenue stream with a known volume must be considered by the consultant. It is important that the exercise is restricted to a known set of agencies only so that the necessary due diligence can be performed. The revenues emerging out of other streams should be seen as an upside for UID/MSP	The document - "Creating a unique identity for every resident in India - Draft approach" (available on www.uidai.gov.in) discusses top targeted agencies and lists primary sources of revenue for authentication services. The Consultant is expected to consider the UIDAI's models during the execution of this activity.
22	Deliverables and Timelines	Section 6, 5, Page 85 Of 132	Time lines	Can the estimates for the project management services be provided post the acceptance of the implementation strategy and during finalization of the DPR? or please provide limited timelines for DPR Approval, Data Center construction and commissioning, procurement and set up of interim co-location facilities for the CIDR, finalization of MSP and currently envisaged implementation timelines ALTERNATIVELY the project duration needs to be capped and the estimates accepted based on the assumptions. In the event of a change in scope the consultant should be allowed Change Request for the Project Management phase	i. The estimates for project management services will have to be provided as part of the RFP response. ii. Refer to Worksheet Section 2 Sl.No 2 of this document for clarification regarding project duration

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23	Key Consulting Resources	Section 6. 6, Page 63 Of 132	The consultant resources will be required to work onsite at the UIDAI office premises	Can it be assumed that all resources are going to be based out of Delhi.	Yes.
24	Section 4.4	Page 71		Does UIDAI have any preference or limitations to the approach on how this needs to be piloted and rolled out in a phase manner with regards to the regions, states and/or section of population that needs to be factored into the proposed approach by the consultant?	At this point of time there is no preference or limitation that needs to be factored into the RFP response
25	Section 6	Page 86	The consultant resources will be required to work onsite at the UIDAI office premises or as required by the project. The consultant firm shall take the complete responsibility to bring in other resources (not mentioned below) as and when required to execute this consultancy assignment.	We understand that the entire work by the consultant core team is to be performed onsite from UIDAI office. However the additional /supporting team can be located anywhere in India. Could you please confirm our understanding and also let us know which city is the UIDAI office located in?	The consultant team has to operate from the UIDAI headquarters in Delhi
26	Functions of the UIDAI	1	These Registrars can either be enrollers, or will appoint agencies as enrollers, who will interface with people seeking UID numbers. The Authority also plans to partner with service providers for providing authentication services.	Registrars will enroll citizens to provide UID. Please elaborate the role of service providers for providing authentication services.	This information is not relevant for providing the response to the CIDR consulting RFP
27	Functions of the UIDAI	Generic	Provide UID Authentication Services	Will it is under the scope of MSP for CIDR tender?	Yes
28		Generic		Will biometric solution implementation be under scope of MSP of CIDR?	Yes.
29	Part II	Clause 3.3b	Go Live	Definition of Go Live?	Please refer to Worksheet - Section 2 Sl. No 2 of this document.
30		Page 58, Sub-section 1, Para 2	Through this RFP, the UIDAI invites proposals from IT consulting firms to provide consultancy services for: designing a programme management strategy and implementation roadmap for the UID project; formulating the strategy, business models, and implementation roadmap for the Central ID Data Repository (CIDR) of the UID project; formulating the requirements & specifications for the CIDR, preparing the required RFPs, managing the bid processes, selecting a Managed Service Provider (MSP), and providing project management services for the implementation of the CIDR	We would like to clarify the following a) We understand that the consultant's scope of work would involve formulating the strategy and business models around the CIDR. Please confirm if the scope of work also involves formulating/ working on strategic model/ roadmap for the UID project, including various processes and UID project implementation guidelines. b) How many key stakeholders linked to CIDR are proposed to be covered under this assignment and what will be the duration of support? c) Since formulating the functional and technical specifications is included in the scope of work of the consultant, it would be helpful if some more details can be provided on the roles and responsibilities envisaged for the MSP especially relating to the extent of application development over and above the Db. d) Does the Scope of work also include defining the process for issuing Unique ID to those who do not have any of the identity documents to show as proof to their identity? e) Biometric technology has not been tested for a database of size as large	a) The consultant's scope of work does not include formulating processes and guidelines for the UID project b) The document – "Creating a unique identity for every resident in India - Draft approach" (available on www.uidai.gov.in) provides information on the stakeholders such as the Registars and other agencies with whom the UIDAI will partner with. c) The details on the roles and responsibilities envisaged for the MSP have been provided in Section 4.6.3 on page 77 of the RFP d) Please refer to a) above.
31		Page 58, Sub-section 1	The term "CIDR", used henceforth in this document includes the complete UID application software, IT infrastructure, data center as well as the disaster recovery center facilities	Does the scope of work include the definition of application functional requirements or are these functional requirements and processes already documented with UIDAI?	Yes. The scope of work includes defining the functional and technical requirements specifications of the application software.

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32		Page 65, Sub-Section 4.2	(ii) The business model should include the various types of revenue streams arising out of delivery of the proposed services from CIDR. The business cases should enable the UIDAI to objectively measure the expected revenues, expected costs, benefits, policy implications, and risks of the proposed business model	a) We would like to clarify whether the role of consultant also includes developing business model to create demand among citizen/ Institutions for UID OR is it limited to business model for revenue streams arising out of delivery of the proposed services from CIDR b) Also, for the strategic option evaluation (of CIDR) do we have any internal evaluation or validation checklists? Is the objective to be self-sustainable or to be profitable?	a) The role of the consultant is limited to business model for revenue streams arising out of delivery of services from the CIDR b) The consultant will be expected to provide the options, checklists, and approaches for strategic evaluation and validation for CIDR revenue models. The primary objective is to be self-sustainable
33		Page 68, Sub-Section 4.4	4.4.2 Functional and Technical Requirements Specifications for the *non-IT (physical)* infrastructure of the CIDR (i) The consultant shall formulate the functional and technical requirements specifications for the non-IT (physical) infrastructure of the CIDR facilities, taking into account various aspects related to site selection, architecture and space planning, electrical system design, mechanical design; security related factors, and flexibility scalability, and modularity conforming to industry standards.	For defining the Requirement Specification who will be the stakeholders that the consultant will have to meet? Will any existing Minutes of Meeting / documentation be provided to the consultant regarding the meetings that has already taken place?	UIDAI staff will be the primary stakeholder the consultant will have to meet. It is expected that existing design requirement documents prepared by the PMU and other members of UIDAI around the key technologies will be provided to the consultant.
34		Page 70, Sub-Section 4.4.2	(vii) The consultant should do a comprehensive estimation of the CIDR facilities' construction costs and associated life cycle costs. The estimate should also include cost elements related to diesel power, UPS, electrical system design, different levels of data center reliability and fault tolerance. The consultant should evaluate the level of redundancy (tier level) and its associated cost versus the cost of downtime. Sensitivity analysis relating to time and cost overruns should also be incorporated.	a) Please confirm whether the building construction consultancy is also included in the mentioned scope of work of the Consultant for Data Centre and DR Facilities	Yes.

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35		Page 71, Sub-section 4 4 3	4 4 3 Functional and Technical Requirements Specifications for the IT systems of the CIDR (i) The consultant shall provide detailed functional and technical requirements for all the IT system components of the CIDR, including but not limited to application software middleware biometric matching and de-duplication software, database, front-end and back-end systems, servers, networking, security, storage, etc The requirements should clearly state the comprehensive capabilities, service levels and performance levels for all the IT components. (ii) In order to assess the technical implications of the CIDR, the UIDAI is planning to implement a Proof-of-Concept (PoC)/ Pilot solution The learnings from the PoC/ Pilot shall be dove-tailed into the full-fledged CIDR solution that will be implemented by the Managed Service Provider (MSP). The consultant is required to interact and work closely with the PoC team, PMU, and other	a) Should not the scope include designing strategy for identification and implementation of a user security policy? b) Are development of relevant systems as Proof of Concepts included within the scope of this engagement? If yes, should the consultant be responsible for recommendation of the technical stack of the proposed CIDR.	a) All the aspects related to information security, including user security policy/ manuals and handbooks privacy policy, need to be designed as part of the deliverable related to information security plan and policies for the CIDR. Please refer Section 4.9 of the RFP, page 80, for details. b) The consultant is not responsible for recommendation of technical stack for the PoC
36		Page 72, Sub-section 4 4 3	The architecture should provide details of the various integration requirements for the CIDR, including	Is there a requirement of integration of any other systems with CIDR? If so, who will be responsible for identification of the changes in those system?	As part of the scope of work for providing the functional and technical requirements specifications for the IT infrastructure, the consultant is expected to provide details of the various integration requirements for the CIDR, which includes interface specifications and standards for intereperability with other systems also
37		Page 72, Sub section 4.4 3	integration of UID processes and the technology solution.	Can an estimate be provided on the nature and volume of the UID processes?	The details sought herein are not necessary for formulating a response to the RFP for the CIDR consultant.
38		Page 72, Sub-section 4 4 3	integration with mobile networks, point-of-sale (POS)/ point-of transaction (POT) devices	Can the scope of integration be elaborated in a little more detail?	Integration with multiple networks is a critical aspect of the CIDR system, since all UID enrolment and authentication services will be available online. UID services could work over secure WAN networks the vanilla internet or over mobile SMS channels It could also potentially work over existing networks such as credit-card POS (point-of-service) devices The consultant is required take into the integration aspects of multiple such networks while formulating the functional and technical requirements of the CIDR
39		Page 73, Sub-section 4.4.3	The consultant shall also specify functional and technical requirements for an administration system that will help administer the UIDAI's operations, including account setup – creation/ modification of Registrars, enrolling and authenticating agency accounts, role based access control – assign rights over UID resources based on role, audit trailing – track every access to the UID system and store audit logs in a secure environment; fraud detection – defect identity theft and cyber crimes using audit trails, reporting and analytics – visual decision support tools – GIS, charting etc.	Can the scope of usage of GIS system be elaborated in more detail?	The UIDAI will employ a GIS internet-based visual reporting system to track enrolment trends and patterns across India, as the project is rolled out across various Registrars and states. The GIS system will show all UID enrolments by state as well as by Registrar The system will also be able to drill down within states and into districts

40		Page 75, Sub-Section 4 6	(ii) The UIDAI may decide to opt for bundling of the above-mentioned 3 RFPs as a single combined RFP (RFP 1 + RFP 2 + RFP 3) or as a combination of 2 RFPs, such as. (a) RFP 1, and (b) RFP 2 + RFP 3.	a) As per the ToR three RFPs are to be created for this assignment. There may be possibility where more than 3 RFPs need to be created, basis the implementation roadmap and overall strategy Please confirm b) Also, do we envisage evaluating and feeding the results of the PoCs in the RFPs? In this case, how are the timelines getting affected? c) What is the overall acquisition / procurement strategy for UID initiative? This is required because it will help the consultant to assess the impact on the timelines for this assignment	a) Yes There could arise a potential situation where more than 3 RFPs may also become necessary to complete the acquisition of the entire UID project, based on the overall strategy and implementation strategy However, as part of the CIDR consulting scope of work, the consultant is required to prepare the RFPs related to the implementation and operations of the CIDR b) Yes Refer to Section 4 4 3 (ii) of the RFP c) UIDAI expects the consultant to provide detailed requirements for CIDR
41		Page 78, Sub-Section 4 6	IT systems management of UIDAI regional offices	What will be the estimated number and purpose of the Regional offices?	Refer to the information provided in the website of the UIDAI - www.uidai.gov.in -> Organisational Structure
42		Page 80, Sub-Section 4 9	(v) The consultant shall propose the plan to obtain compliance to ISO 27001 and IT Act of the Government of India	Does the scope include assistance in obtaining the certification OR only the preparation of plan / roadmap?	The scope of work in this activity includes providing the complete plan and design of the ISMS based upon which the CIDR facilities can be assessed for compliance to ISP 27001 and IT Act
43		Page 82 Sub-section 4 11	(iv) The consultant shall also undertake on behalf of UIDAI the User Acceptance Testing (UAT) of the application software, by preparing test cases, test database, imparting training to the UIDAI-designated testers, documenting the defects, and troubleshooting its resolution with the MSP The consultant shall guide the MSP in setting up the test environment (The test environment shall also form part of the Bill of Materials in the RFP for MSP) (v) The consultant shall be responsible for certifying the completion of implementation and readiness of CIDR to Go-Live.	We would like to clarify the following a) We understand that the Consultant will not be a part of the contract that is signed between MSP and UIDAI. The consultant will assist and support the activities of the UIDAI. b) Please confirm whether the test cases are prepared by the MSP which are verified by the consultants and the Client, or the responsibility of preparing the test cases lies with the Consultant. c) Does the scope of work include complete testing of the system (including UAT, performance testing, load testing, regression tests, failover tests etc) OR we simply validate the test results of the MSP via a randomly sampled test case. d) Please confirm that tools required for testing would be provided by the MSP. The consultant would not be responsible for procuring those tools. e) Please confirm that the responsibility for simulating the test environment/ performance testing/ security testing etc will lie with the MSP f) Are there any penalty/reward clauses associated for the	a) Yes. The consultant will not be a party of the contract between MSP and UIDAI b) Refer to 4 11 (iv) of the RFP, which states that the consultant shall prepare the test cases. c) Please refer to 4 11 (vii) of the RFP d) The consultant would not be responsible for procuring the testing tools e) Refer to 4 11 (iv) of the RFP, which states that the consultant shall guide the MSP in setting up the test environment for the UAT Devising parameters for measuring the performance testing, If undertaken, will be the responsibility of the consultant.
44		Page 71, Sub-section 4.4.3 Functional and Technical Requirements Specifications for the IT systems of the CIDR	(ii) In order to assess the technical implications of the CIDR, the UIDAI is planning to implement a Proof-of-Concept (PoC)/ Pilot solution. The learning's from the PoC/ Pilot shall be dove-tailed into the full-fledged CIDR solution that will be implemented by the Managed Service Provider (MSP) The consultant is required to interact and work closely with the PoC team, PMU, and other stakeholders of the UIDAI while formulating the detailed functional and technical requirements specifications for the CIDR IT systems	We have some observations about the proposed PoC/Pilot. We request clarification on the following. e) Will there be separate RFPs for PoC and MSP? b) If yes, then the timelines for the same will need be reflected in Section 5 (Page 85). c) If no, then how do we envisage including the takeaways from PoC in the specifications that are defined for the MSP? d) Since this is a first of its kind project in India is there a possibility to have multiple pilots (PoC) to test different implementation models?	a) No. As part of this RFP, there will not be a RFP for the PoC c) The consultant is required to interact and work closely with the PoC team, PMU and other stakeholders of the UIDAI while formulating the detailed functional and technical requirements specifications for the CIDR MSP RFP d) At the time of writing of this RFP, a single pilot implementation has been envisaged

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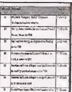
45		Page 85, Section 5 Timelines		We submit if the timelines provided in the RFP can be reconsidered given the fact that after each deliverable, the same will have to be reviewed and approved by UIDAI and these takes time. In any case the timelines for review and approval by UIDAI will not be considered for the time allocated to Consultant for the scope of work defined	The timelines mentioned in the RFP remain unchanged
46		Page 86, Sub-Section – 6 Key Consulting Resources Required for the Project	The consultant firm shall take the complete responsibility to bring in other resources (not mentioned in the list provided in ToR) as and when required to execute this consultancy assignment.	a) We believe that in addition to the key roles/ positions mentioned in the RFP, some other positions should be included in the RFP as these positions would also be crucial for successful execution of the project 1) **Forensic Expert** – To understand the issues revolving around frauds and cyber laws and provide inputs in functional specifications 2) **Tax Expert** – To assess the implications of business models surrounding the CIDR 3) **Internal Audit Expert** – To audit the processes of CIDR 4) **Testing Expert** – Since the ToR lays a great deal of emphasis on Testing, a testing expert with knowledge of tools in the industry is required for successful delivery of progress. b) Also, we would like to clarify that does the consultant have the liberty to propose additional positions as part of its technical proposal?	No clarification is needed
47		Page 86, Sub-Section – 6 Key Consulting Resources Required for the Project	**Program Manager** (Full Time resource who must continue during the Project Management of CIDR implementation) **Qualification and Professional Experience Required** B Tech/ B.E + MBA from a premier institute - Atleast 15 years of relevant experience of leading a team with - Must have atleast one end-to-end IT programme/ project experience in a large Government/ Enterprise environment. - Must have experience in Project Management of atleast 2 completed Consultancy assignments with a consultancy value of atleast Rs. 50 lakhs	Given the fact that this is first of its kind project in India, we submit that international experts, with exposure to similar work should be a part of project management team Specifically, role of Program Manager may have an international expert. The Current RFP lays no emphasis to actual international exp in such projects (even though the scale may be different) instead it seem to emphasis pure "IT" related experience.	While the consultants are encouraged to bring the best consulting resources with national and international project experience, no extra emphasis on international experience in the resource profile requirements is envisaged in the RFP

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48	Section 6	6 (1, 2, 3, 4, 5) on Pages 86 and 87	"... Project Director - 20 years of experience,... " "... Program Manager - At least 15 years of relevant experience " "....Project Manager (IT Systems) - 10 years of experience... " "... Project Manager (Data Centre Infrastructure) - 10 years of experience " "... Strategy Consultant - Experience of at least 10 years "	We feel that the "total no. of years of experience" requirement is on the higher side and request you to kindly consider the following modifications in the professional experience requirement for profiles to be evaluated: ·The total experience requirement of the Project Director be reduced from existing 20 years to 15 years ·The total experience requirement of the Program Manager be reduced from existing 15 years to 12 years ·The total experience requirement of the Project Managers (IT / Data Center Infrastructure) be reduced to 8 years ·The total experience requirement of the Strategy Consultant be reduced from existing 10 years to 8 years	The experience requirements conditions remain unchanged
49	NA	NA	NA	Kindly clarify if getting the necessary regulatory approvals for the creation of the non-IT infrastructure will fall under the scope of the Consultant or under UIDAI / system integrator's purview.	No, Obtaining regulatory approvals for the CIDR physical infrastructure is not within the scope of the consultant. However, the consultant will have to advise and guide the UIDAI on the various regulatory approvals and permissions that may be needed for establishing the CIDR facilities

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Section 7 - Clarifications to queries related to Standard Contract

Sl. No	Tender Section	Tender clause / provision no.	Existing Text of the clause/provision in the tender	Clarification/ modification sought	Clarification provided by UIDAI
1	Section 7 – Standard Forms of Contract and Annexure	General Conditions of Contract 3.5 – Accounting, Inspection and Auditing	"shall periodically permit the "Employer" or its designated representative and/or the Employer, and up to five years from expiration or termination of this Contract, to inspect the same and make copies thereof as well as to have them audited by auditors appointed by the "Employer" or the Employer, if so required by the "Employer" or the Employer as the case may be"	1. Prior written notice should be given for conducting such an audit? What is the notice period? 2. Any such inspection should not cause undue interference in our regular business operations? 3. Audit should be subject to confidentiality obligations on the client's auditor 4. Audit should not be carried out by Accenture's competitors	1. Not required 2. Ok, but all required details have to be furnished 3. Details requested by auditors pertaining to the project have to be shared 4. Ok
2	Section 7 – Standard Forms of Contract and Annexure	General Conditions of Contract 2.1 – Effectiveness of Contract	"This Contract shall come into force and effect on the date (the "Effective Date") of the Employer's notice to the Consultant instructing the Consultant to begin carrying out the services. This notice shall confirm that the conditions precedent and effectiveness conditions, if any, listed in the SC have been met"	Are we referring to the scenario when contract has been executed however shall be effective when client orders to start the work?	Para 2.1 states that "This Contract shall come into effect on the date the Contract is signed by both Parties or such other later date as may be stated in the SC The date the Contract comes into effect is defined as the Effective Date." This means that the Effective Date is the date on which the contract is signed by both parties
3	Section 7 – Standard Forms of Contract and Annexure	General Conditions of Contract 2.2 – Termination of Contract for Failure to Become Effective	"If this Contract has not become effective within such time period after the date of the Contract signed by the Parties as specified in the SC, either Party may, by not less than twenty one (21) days written notice to the other Party, declare this Contract to be null and void, and in the event of such a declaration by either Party, neither Party shall have any claim against the other Party with respect hereto."	Can you please clarify? What is the time period?	The consultant must start the consultancy assignment within 15 days after the contract is signed by both parties
4	Section 7 – Standard Forms of Contract and Annexure	General Conditions of Contract 9.3 (a) & (b)	The liquidated damages shall be applicable under following circumstances (a) If a particular deliverables is not submitted as per schedule as specified in SC 13 on account of reasons solely attributable to the Consultant, the Consultant shall be liable to pay 5% of the total cost of that deliverable, for delay of each week beyond 30 days or part thereof (b) If a particular deliverables is not acceptable to the Employer as mentioned in Clause 6.3 (f), and defects are not rectified to the satisfaction of the Employer within 30 days of the receipt of the notice, the Consultant shall be liable for Liquidated Damages for an amount equal to 5% of total cost of that particular deliverable for every week or part thereof for the delay	1. We think that LD is very high - it should be 1% of total cost 2. There should be an upper cap on LD	Shall not be changed

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5	Clause 6 3 - special Conditions Page 120 of 132	Clause 6 3 - special Conditions Page 120 of 132		Given the resource intensive assignment and the fact that first payment to the consultant is coming in only after 3rd month, we would request UIDAI to consider mobilization advance of 10% to the Consultant on submission of the required performance guarantee Since this payment would be against the Performance Guarantee, the interests of UIDAI shall be adequately covered	While it is not possible to provide a mobilization advance, the payment term for the 1st milestone has been changed to 10% after the first deliverable "Programme Management Strategy, Components, Roadmap, and Implementation Plan" (instead of 20% after the first 3 deliverables) The revised payment schedule for the first installment is as below (i) Ten (10%) percent of the lump-sum amount quoted for consultancy assignment shall be paid upon acceptance of the following deliverables by UIDAI (a) 'Programme Management Strategy, Components, Roadmap, and Implementation Plan' (ii) Ten (10%) percent of the lump-sum amount quoted for consultancy assignment shall be paid upon acceptance of the following deliverables by UIDAI (a) 'Strategy, Business Models, Business Cases, and Potential Revenue Streams for CIDR' (b) 'Implementation Strategy and Implementation Roadmap for the CIDR'
6	GC 2 9 5 (b) at page 105	GC 2.9 5 (b) at page 105	(b) If the agreement is terminated pursuant of Clause 2.9.1 (a) to (c) and (f) to (i), the consultant shall not 30 days of termination date.	Kindly replace the words 'Clause 2 9 1 (a) to (c) and (f) to (i)' by 'Clause 2 9 1 (a) to (c), and (f) and (i) in the first and second lines of this clause Without this amendment, GCs 2 9 5 (a) and 2 9 5 (b) would be contradictory	The clause 2.9.5 (b) shall read as "If the agreement is terminated pursuant of Clause 2 9.1 (a) to (c) , (f) and (i), the consultant shall not . ... .. 30 days of termination date.
7	GC 8.2 (a) at page 115	GC 8 2 (a) at page 115	.... within a period of 30 days from the date of appointment of the two arbitrators, the Presiding arbitrator shall be appointed by the Secretary of the Ministry of Home Affairs.	In the event of a deadlock between the appointing arbitrators, the Presiding Arbitrator should be appointed by a neutral body such as Indian Council of Arbitration Hence, request to replace the words Secretary of the Ministry of Home Affairs by 'Indian Council of Arbitration or other neutral arbitration institution	Shall not be changed
6	GC 9 (Liquidated Damages) at page 115	GC 9 (Liquidated Damages) at page 115	G C 9 2 The amount of liquidated damages for a particular deliverable under this Contract shall not exceed 1 % Appendix D. G C 9 3 (a) .. attributable to the Consultant, the Consultant shall be liable to pay 5% of the total cost of that deliverable	GC 9 2 states that the amount of Liquidated Damages (LDs) for a particular deliverable will not exceed 1% of the deliverable's value However GC 9.3 states that liquidated damages in case of delay would be 5% of the deliverable's value per week of delay These two clauses are contradictory It is requested that the liquidated damages need to be expressly 'capped' at a reasonable percentage (not exceeding 20%) of the Contract Price	Clause GC 9 2 refers to any delay in submission of deliverables as per Timelines given in Para 5 (Page 85) of Section 6. Clause GC 9 3 refers to penalty for every week of delay beyond 30 days of delay in submission of deliverables Clause GC 9.2 is modified to read as 'The amount of liquidated damages for a particular deliverable under this Contract for a delay in submission less than 30 days shall not exceed 1 % of the proportionate value of the portion of that deliverable (as specified in Appendix D) which is deemed incomplete by the Employer as on the specified date of submission of that deliverable'

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9	Proposed new clause			It is requested that the following limitation of liability clause must be inserted in the General Conditions of the contract. 'The aggregate liability of the Consultant under this Contract, or otherwise in connection with the Services, shall in no event exceed the Contract Price.'	The suggestion is not accepted
10	SC 3.5 at pg 119		The risks and the coverage shall be as follows (a) Third Party motor vehicle liability insurance in respect of motor vehicles ... ... by the Consultant in the performance of the Services	This Special condition lists out detailed insurance requirements Requested to replace the entire text of SC 3.5 with a requirement stating that 'the Consultant should procure such insurance covers as are required under Applicable Law'	Shall not be changed
11	Clause 3.13 Performance Bank Guarantee Page 14 of 132	Clause 3.13 Performance Bank Guarantee Page 14 of 132	The bank guarantee must be submitted after award of contract but before signing of consultancy contract	Given that the Bankers normally ask for valid contract before issuing a Bank Guarantee would request the change of clause to - "The bank guarantee must be submitted after award of contract and within 15 working days of signing of consultancy contract"	Shall not be changed
12	Liquidated Damages	Section 6, 3, Page 63 0f 132	Liquidated Damages	Please clarify on the terms there seems to be an error on the maximum amount of LD and also the penalty to be levied on a weekly basis	Please refer Sl No 8 above
13	Section 7	Page 100, Clause 1.9	**"Taxes and duties"** - The Consultant, Sub-Consultants, and their Personnel shall pay such indirect taxes, duties fees, and other impositions levied under the Applicable Laws of India	Please confirm whether the service tax would be borne by the client?	Service tax shall be borne by the Consultant and the same shall be considered while bidding It is evident from Form FIN-2
14	Section 7	Page 107, Clause 3.3	**"Confidentiality"**: Except with the prior written consent of the Employer, the Consultant and the Personnel shall not at any time communicate to any person or entity any confidential information acquired in the course of the Services, nor shall the Consultant and the Personnel make public the recommendations formulated in the course of, or as a result of, the Services	Subject to the confidentiality obligations, please confirm if consultant will be allowed to use this engagement as an experience citation with its other clients	The clause shall remain unchanged
15	Section 7	Page 107, Clause 3 4	**"Insurance"**: The Consultant (a) shall take out and maintain, and shall cause any Sub-Consultants to take out and maintain, at their (or the Sub-Consultants', as the case may be) own cost but on terms and conditions approved by the Employer, insurance against the risks, and for the coverage, as shall be specified in the SC; and (b) at the Employer's request, shall provide evidence to the Employer showing that such insurance has been taken out and maintained and that the current premiums have been paid	Please note that PwC at an organisational level maintains Professional Liability Insurance coverage and property/equipment insurance, and maintenance of motor vehicle insurance is a statutory requiremant. However, we would like to clarify whether Client expects PwC to take out project specific insurance?	If the insurance cover already possesses these insurances specific insurance need not be taken. However, clear documentation with respect to these insurances need to be given to the Employer Incase the Employer deems than the insurance cover is not satisfactory, the consultant shall procure project specific insurance

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16	Section 7	Page 107, Clause 3.5	**"Accounting, Inspection and Auditing":** The Consultant (i) shall keep accurate and systematic accounts and records in respect of the Services hereunder, in accordance with internationally accepted accounting principles and in such form and detail as will clearly identify all relevant time changes and costs and the bases thereof, and (ii) shall periodically permit the "Employer" or its designated representative and/or the Employer, and up to five years from expiration or termination of this Contract, to inspect the same and make copies thereof as well as to have them audited by auditors appointed by the "Employer" or the Employer, if so required by the "Employer" or the Employer as the case may be.	We would like to clarify that audits, if any, should be preceded with a written notice of 45 days, specifying in sufficient detail the nature of the records proposed to be inspected/audited by the Client. Further, all the associated costs with any such audits shall be borne by the client. Also, Consultant will not be required to maintain a separate set of books of accounts for the purpose of this clause	Refer SI No 1 above for notice
17	Section 7	Page 107, Clause 3.8	**"Documents prepared by the Consultant to be the property of the employer"**	We would like to clarify that Consultant shall continue to retain sole ownership of the pre-existing proprietary knowledge, tools, methodology, templates and intellectual property content brought in by Consultant to this engagement and/or incorporated in the deliverables submitted by Consultant to the Client. Further, any third party licenses, necessary for the performance of the services, would need to be procured by the client.	The existing clause remains unchanged
18	Section 7	Page 111, Clause 5 2	"Change in the Applicable Law Related to Taxes and Duties" - If, after the date of this Contract, there is any change in the Applicable Laws of India with respect to taxes and duties which are directly payable by the consultant for providing the services i.e. service tax or any such applicable tax from time to time, which increases or decreases the cost incurred by the Consultant in performing the Services, then the remuneration and reimbursable expenses otherwise payable to the Consultant under this Contract shall be increased or decreased accordingly by agreement between the Parties hereto, and corresponding adjustments shall be made to the ceiling amounts specified in Clause GC 6 1(b)	We would like to clarify that in the event of any decrease in taxes during the term of the Agreement, PwC would have already paid the taxes to the necessary authority and therefore the time period for refunding such difference from the government should be given to PwC	Any payments or refunds shall be in accordance with the financial norms laid down by UIDAI

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19	Section 7	Page 117 Clause 10.1	Clause 10 1 (v) - (vii) "Indemnities" – (v) The Contractor/Consultant shall at all times indemnify and keep indemnified the Employer/Government of India against all claims/damages etc. for any infringement of any Intellectual Property Rights (IPR) while providing its services under the Project. (vi) The Contractor/Consultant shall at all times indemnify and keep indemnified the Employer/Government of India against any claims in respect of any damages or compensation payable in consequences of any accident or injury sustained or suffered by its (the Contractor's/Consultant's) employees or agents or by any other third Party resulting from or by any action, omission or operation conducted by or on behalf of the Contractor/Consultant. (vii) The Contractor/ Consultant shall at all times indemnify and keep indemnified the	We would like to clarify that PwC shall only be liable for IPR claims solely attributable to PwC Client shall notify PwC in writing of any claim which may give rise to a claim for indemnification and shall co-operate with all reasonable requests of PwC in defending or settling such claim This indemnity does not cover alleged infringements caused by modifications to the work performed by PwC that are not made by PwC or that result from Client or third party provided designs specifications or other information or from combination of such work with products or services not provided by PwC **Also, there is no limitation of liability cap. Please confirm that Consultant's overall liability under the engagement shall be kept capped at 1x the fees and shall be restricted to direct costs only. Neither party would be liable for indirect or consequential damages.**	i) The existing clauses related to IPR shall remain unchanged ii) The suggestion related to limitation of liability is not accepted
20	GCC	GC, 6 3 Terms of payment	Final Payment: The final payment as specified in SC 13 shall be made only after the final report and a final statement,identified as such, shall have been submitted by the Consultant and approved as satisfactory by the "Employer" The Services shall be deemed completed and finally accepted by the "Employer" and the final report and final statement shall be deemed approved by the "Employer" as satisfactory ninety (90) calendar days after receipt of the final report and final statement by the "Employer" unless the "Employer", within such ninety (90) day period, gives written notice to the Consultant specifying in detail deficiencies in the Services, the final report or final statement. The Consultant shall thereupon promptly make any necessary corrections, and thereafter the foregoing process shall be repeated Any amount, which the "Employer" has paid or caused to be paid in accordance with this Clause in excess of the amounts actually payable in	There is a reference to SC 13. SC 13 is not available in the document. Please clarify the final report and final statement is with respect to each deliverable since the milestones and payments are linked to these deliverables	Clarified that the final report and final statement applies to each deliverable

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21	GCC	GC, 6 3 Terms of payment	Once a milestone is completed, the consultant shall submit the requisite deliverables as specified in this Contract The Employer shall release the requisite payment upon acceptance of the deliverables However, if the Employer fails to intimate acceptance of the deliverables or its objections thereto, within 30 days of receipt of it the Employer shall release 75% of the payment for the respective deliverable without further delay (maximum 30 days) and the consultant shall produce a Bank Guarantee for the same. The remaining 25% of the payment for the respective deliverable shall be paid on acceptance of the deliverable by the Employer The Bank Guarantee shall be released when the Unique Identification Authority of India accepts the respective deliverable	It is requested that there should be maximum period defined in which the acceptance is given to a particular deliverable by UIDAI and the remaining 25% released UIDAI is anyway holding a bank guarantee from the consultant	The existing clause remains unchanged
22	SCC	6 1,	According to the following schedule i) Twenty (20%) percent of the lump-sum amount quoted for consultancy ssignment shall be paid upon acceptance of the following deliverables by UIDIA (a) Programme Management Strategy, Components, Roadmap and Implementation Plan' (b) 'Strategy, Business Models, Business Cases, and Potential Revenue Streams for CIDR' (c) 'Implementation Strategy and Implementation Roadmap for the CIDR (ii) Twenty (20%) percent of the lump-sum amount quoted for consultancy assignment shall be paid upon acceptance of the following deliverables by UIDAI (a) 'Overview of Functional and Technical Solution of the CIDR, as input to DPR (b) 'Functional and Technical Requirements Specifications for the non-IT (physical) infrastructure of the CIDR' (c) 'Functional and Technical	Capgemini requests the following changes in payment terms **First Installment:** Ten (10%) Mobilisation or Advance **Second Installment :**Twenty (20%) percent of the lump-sum amount quoted for consultancy ssignment shall be paid upon acceptance of the following deliverables by UIDIA (a) 'Programme Management Strategy, Components, Roadmap, and Implementation Plan' (b) 'Strategy, Business Models, Business Cases, and Potential Revenue Streams for CIDR' (c) 'Implementation Strategy and Implementation Roadmap for the CIDR' **Third Installment** (ii) Twenty (15%) percent of the lump-sum amount quoted for consultancy assignment shall be paid upon acceptance of the following deliverables by UIDAI (a) 'Overview of Functional and Technical Solution of the CIDR, as input to DPR (b) 'Functional and Technical	Please refer Sl.No 5 above for changes related to First installment. The other payment terms remain unchanged
23	SCC	6.1,	(iv) Ten (10%) percent of the lump-sum amount quoted for consultancy assignment shall be paid upon acceptance of the following deliverables by UIDAI (a) 'Risk Management Strategy and Plan for the CIDR' (b) 'Information Security Plan and Policies for the CIDR' (c) 'Disaster Recovery Plan (DPR) and Business Continuity Plan for the CIDR	**Fifth Installment** Seven and a Half (7 5%) percent of the lump-sum amount quoted for consultancy assignment shall be paid upon acceptance of the following deliverables by UIDAI (a) 'Risk Management Strategy and Plan for the CIDR' (b) 'Information Security Plan and Policies for the CIDR' (c) 'Disaster Recovery Plan (DPR) and Business Continuity Plan for the CIDR	Please refer Sl No 5 above for changes related to First installment. The other payment terms remain unchanged

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24	SCC	8 1.	(v) Ten (10%) percent of the lump-sum amount quoted for consultancy assignment shall be paid upon completion of the 'Bid Process Management for Selection of Managed Service Provider' The payment shall be made on selection of the Managed Service Provider	**Sixth Installment** Seven and a Half (7.5%) percent of the lump-sum amount quoted for consultancy assignment shall be paid upon completion of the 'Bid Process Management for Selection of Managed Service Provider'. The payment shall be made on selection of the Managed Service Provider	Please refer Sl No 5 above for changes related to First installment. The other payment terms remain unchanged
25	SCC	8 1,	(vi) Fifteen (15%) percent of the lump-sum amount quoted for consultancy assignment shall be paid upon completion of the 'Certification and Go- Live of the CIDR'	**Seventh Installment** Fifteen (15%) percent of the lump-sum amount quoted for consultancy assignment shall be paid upon completion of the 'Certification and Go- Live of the CIDR'.	Please refer Sl No 5 above for changes related to First installment. The other payment terms remain unchanged
26	SCC	8 1,	(vii) Five (5%) percent of the lump-sum amount quoted for consultancy assignment shall be paid upon acceptance of the 'Terms of Reference for 3rd Party Audits' by UIDAI	**Eight Installment** Five (5%) percent of the lump-sum amount quoted for consultancy assignment shall be paid upon acceptance of the 'Terms of Reference for 3rd Party Audits' by UIDAI	Please refer Sl No 5 above for changes related to First installment. The other payment terms remain unchanged
27	SCC	8 1,	(viii) Five (5%) percent of the lump-sum amount quoted for consultancy assignment shall be paid upon completion of '3 months of Post implementation	**Ninth Installment** Five (5%) percent of the lump-sum amount quoted for consultancy assignment shall be paid upon completion of '3 months of Post implementation	Please refer Sl.No 5 above for changes related to First installment The other payment terms remain unchanged

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General - Clarifications to general queries

Sl. No	Tender Section	Tender clause / provision no.	Existing Text of the clause/provision in the tender	Clarification/ modification sought	Clarification provided by UIDAI
1	General	None	None	What is the life of the UID itself? Will it remain valid after the expiry of the individual? – (we need to plan for the infrastructure scalability)	The document - "Creating a unique identity for every resident in India - Draft approach" (available on www.uidai.gov.in) provides necessary information However, this information is not relevant for bidding purposes
2	General	None	None	Will UIDAI ensure that the required SMEs (incl various organizations to which the database will be connected) to understand and define the requirements? If the delay of the deliverable is caused by non-availability of right resources, how the contract extension will be handled?	While all attempts will be made by the UIDAI to ensure timely interactions with the required stakeholders during the requirements gathering and definition phase, it is the consultant's responsibility to assess risks and issues related to these aspects during the project execution and minimize any delays to the associated deliverables
3	General	None	None	What is the preferred method for project review meetings? A. Always In-Person, B Always teleconference, C. Combination of both? What is the preferred location for in person meetings?	Always In-person in Delhi/ Bangalore as required
4	General			Given the National importance of the project and sensitivities involved; is there any limitation on proposing Team experts of Non-Indian Nationality	No restrictions on the same but Consultant shall be responsible for any legal liabilities arising as a result of the expert's action
5	General			The UIDAI will not issue any card to the citizen. Will there be any authority to issue Identity card to the beneficiary? If so, what kind of a card would it be? Can that card be scanned at other Govt agencies for authentication/verifying eligibility?	Not relevant. These are implementation aspects which are not relevant now
6	General			Will the business models of all governments departments be changed to accommodate UID number concept?	Not relevant These are implementation aspects which are not relevant now
7	General			Will the fingerprint and other demographic details of each beneficiary be stored in his/her UID Card?	Not relevant These are implementation aspects which are not relevant now
8	General			Will the UID card need to be complaint with NREGA, RSBY and PDS standards?	Not relevant. These are implementation aspects which are not relevant now.
9	General			How will NREGA, RSBY and PDS authenticate the UID of about the eligibility of each beneficiary?	Not relevant These are implementation aspects which are not relevant now
10	General			Will the proposed online solution enable banking transactions for NREGA, RSBY and PDS?	Not relevant. These are implementation aspects which are not relevant now.
11	General			The purpose of UIDAI is to issue a UID to all Indian residents that is robust to eliminate duplicate and fake identities. Does this mean the identities are available now?	No
12	General			How will the registrars/enrollment agencies collect and authenticate applicants' data?	Not relevant These are implementation aspects which are not relevant now
13	General			Are there any guidelines/standards for allotting UIDs to individuals without any documents for proof?	Not relevant These are implementation aspects which are not relevant now

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14	General			How will the identity of new born collected? Will it be the responsibility of the Registrar of births and deaths or the hospitals?	Not relevant These are implementation aspects which are not relevant now.
15	General			Will the UID of a dead person cancelled? What will be the authentication method? Will it be the responsibility of the Registrar of births and deaths?	Not relevant These are implementation aspects which are not relevant now.
16	General			What is going to be the turn around time for each RFP?	The Bid Process Management for each RFP is expected to take 2 months
17	General			How can the progress of poor people and school children be tracked using UID?	Not relevant These are implementation aspects which are not relevant now.
18	General			Will the UID data be updated at regular intervals of time to track progress and updates at individual level apart from the bio-metrics which are updated every ten years?	Not relevant These are implementation aspects which are not relevant now
19	General			What is the eligibility criteria to appoint registrars and private agencies?	Not relevant These are implementation aspects which are not relevant now
20	General			Will the winning agency of this bid be eligible to participate in the implementation of setting up of CIDR?	No
21	General			What are the potential revenue models and streams for CIDR? (Deliverable D2)	That is what the consultant is supposed to recommend
22	General			Can the beneficiary update his address change details etc online? (Self help)	Not relevant. These are implementation aspects which are not relevant now
23	General			Are there any specific standards for biometric readers and methods for collection of biometrics?	Not relevant. These are implementation aspects which are not relevant now
24	General			will the e-governance centers be given authority to update UIDs?	Not relevant. These are implementation aspects which are not relevant now
25	General			Is there any process for the citizen to claim for rejection of his UID application?	Not relevant These are implementation aspects which are not relevant now
26	General			Does the consultant need to train the central and state agencies after implementation?	No
27	General			Will there be any automatic alert system that sends alerts to citizens about the expiry and re-activation of their UID	Not relevant These are implementation aspects which are not relevant now
28	General			Will there by any call centers for UID grievances to help beneficiaries?	Yes The RFP for the MSP shall contain the specifications for setting up the Call center Refer Para 4.6.3 of Section 6
29	General			What kind of help is offered by UIDAI to the consultants in formulating functional requirements and standard operating procedures?	The existing design requirement documents prepared by the PMU and other members of UIDAI around the key technologies will be provided to the consultant
30	General			Who are the stakeholders of UIDAI?	The document - "Creating a unique identity for every resident in India - Draft approach" (available on www.uidai.gov.in) provides necessary information
31	General			What are the policies for terminating contract?	Please refer Para 2 of Section 7
32	General			Who will decide the eligibility criteria for the proposed RFPs? Will it be UIDAI or the consultant?	Will be recommended by the Consultant and jointly decided by UIDAI and Consultant

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Appendix A : Part C

Description of Approach & Methodology

Preamble

> *"Recall the face of the poorest and the weakest man whom you may have seen and ask yourself if the step you contemplate is going to be of any use to him. Will he gain anything by it? Will it restore him to a control over his own life and destiny?"* - Mahatma Gandhi

Delivering services to a community ot billion individuals - each with unique needs - and helping each one achieve his or her own potential is vital to helping the larger community called India achieve its potential. The Unique ID ("UID") initiative is a measure to help us achieve this end.

Creation of the Central ID Data Repository ("CIDR") is one of the critical success factors tor delivering the benefits of Unique ID. It has to be built to last. It will be a key instrument to secure equality of opportunity to India's citizens. As a step under contemplation, it stands the test of Gandhiji's talisman and has the potential to transform the lives of a billion people. This is our inspiration to participate in this initiative.

Ernst & Young's business strategy is founded on engagement with our people, clients and communities to help them achieve their potential. As authors of this proposal, we consider it our privilege to be able to present to the Unique ID Authority of India ("UIDAI") some of our views on how the CIDR can be implemented **successfully**. We hope we have addressed those issues in this proposal which will be pertinent to a successtul implementation and that these add value to the overall UID program.

The UID Implementation Program and CIDR implementation

"To secure to all Indian citizens equality of status and of opportunity"

This was one of the tirst resolutions that we as people of India took when we constituted ourselves as a democratic republic more than three score years ago. Since then the nation has rolled out large programs to fulfill this resolve. The fultillment has, however, been partial despite efforts of a nature unseen elsewhere in the world. The lack of unique citizen identity has stalled these efforts to a great measure. The other reason has been our growing population for which no means have proved adequate enough.

We are entering a new decade of the 21st century. The steps that we started taking to infuse technology into governance are now delivering results. Public contidence in technology as a harbinger of better if not good governance is increasing. The UID program is a culmination of this growing confidence in our ability to technology for better governance.

In its current form, the Unique ID will be a random 12-digit number with the basis for establishing uniqueness ot identity being biometrics. This ID shall be generated through a technology solution. We shall refer to this technology solution as the Central ID Data Repository ("CIDR").

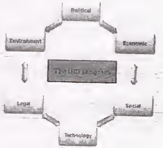
By announcing the launch of the UID program we have made a bold statement. We have stated that we will provide a Unique Identity to over 1,139,964,932 people and use that as a measure to secure equality of status and of opportunity. We have captured global attention and countries around the world - especially the developing world - want us to show the way. In short, India needs to successfully implement the UID program.

Much of the media focus surrounding the UID program has been around the technology solution, especially the CIDR and its feasibility. We shall discuss these aspects in detail in our approach. To begin with, however, it might be pertinent to assess the various elements of the UID program and how the CIDR implementation project will fit in. As one of the first deliverables of our assignment, we shall illustrate below first our methodology and our approach with illustrations to study of the UID implementation program.

The PESTLE framework

The UID program has numerous perspectives and without a structured approach significant aspects may be missed out. Keeping this in view, we would like to propose, for a start, using the time-tested PESTLE (Political, Economic, Social, Technology, Legal and Environment) framework to ensure coverage of all key dimensions of the UID program.

We shall then identify key ongoing initiatives of the UID program in each of the areas and align the CIDR implementation program to it. We illustrate below how this approach will assist us in analyzing the overall UID program and preparing the implementation strategy for the CIDR.[1]



Political dimensions of the UID program

The UID program is a change initiative of unprecedented scale. Political support and alignment of the UID program with the political objectives would be vital for the success of the program. The Government of India is keen on having the initial set of UID numbers getting rolled out during the calendar year 2011. Working backwards, this would imply that at a minimum the co-located interim implementation of the CIDR should be complete.

Three other aspects in this dimension which could be assessed from an implementation planning perspective would include:

a. Political support for the legislative framework to be created for the UID: A series of legislations would be required to give the UID a valid legal existence. This may require amendments, sometime minor, to a series of existing legislations. In our democratic setup, this support would be vital.
b. Political buy-in for the funding required for CIDR: Till such time a workable solution is not worked out, it would be difficult to estimate the extent of funding that would be required for the CIDR. There is a likelihood of strong political views emerging on project viability which could in turn have an impact on the CIDR implementation plan.
c. Acceptance of UID by the state and local self-governments: The enrollment of citizens shall be driven to a large extent by the political support from state and local self-governments. Their acceptance of the concept and political support for making the necessary legislative changes at the State level would be vital to promote acceptance of the UID.

Economic dimensions of the UID program

Acceptance by large service delivery institutions would be vital for the economic viability of rolling out a large program like the UID, especially the CIDR which will be operated on a PPP model. Some of the key sectors which could adopt the UID early will be the telecom, banking and financial services sectors. Simultaneously, it is essential that the CIDR is ready to accept the load created by millions of customers and the transactions which entail usage of UID. Examples could be:

i. Changes to the Know Your Customer ("KYC") procedures
ii. RBI and SEBI guidelines regarding UID enabled financial transactions

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[1] Based upon the Version 1.0 of the approach paper for UID published by UIDAI

iii. Tax compliance related transactions [Direct Tax (New Direct Tax Code) and Indirect Taxes (Goods and Services Tax)]

iv. Changes to guidelines for issuance of Digital Signatures

This will indirectly create temporary costs for these sectors in terms of process and technology changes and roll out of the UID Know Your Resident ("KYR") requirements.

Social dimensions of the UID program

The social side of the UID program will require detailed analysis in itself. Some aspects that would need to be studied and aligned back with the CIDR rollout would be:

- Plans for citizen communication or public awareness especially among difficult-to-reach communities
- Initiatives for training and capacity building in Outreach agencies
- Spreading awareness among Government officials about the role of UID in delivery of services

A structured marketing program would need to be used to synchronize the UID rollout with readiness of the respective enrollment agencies and the CIDR. The benefits of UID would need to be communicated through mass media in various local languages and through other innovative methods. Some key messages that would need to be delivered would be:

a. What is UID?
b. How can you use the UID?
c. How will the UID benefit you?
d. What can you do to receive a UID?
e. What would you be asked for when you apply for UID?
f. How to handle exceptional situations
g. Who will help you obtain a UID?

Technology dimensions of the UID program

While we shall discuss this in detail CIDR related technology aspects in our approach paper, from a UID program perspective availability and maturity of certain technologies may have an impact. These include:

- Technology maturity of enrollment agencies
- Technology maturity of user groups

UID rollout is currently envisaged to be done through an extended ecosystem of agencies. These are the Registrars, Sub-registrars and Outreach agencies. Since enrollment will be driven electronically, it is essential that rollout to these agencies happens in line with overall rollout plan for UID.

To a great degree, the effectiveness of UID will come only once the user groups are technology enabled to use it. As examples we can consider the following:

- Readiness of enrollment agencies: Considering the new data standards and biometric standards specified, all registrars and sub-registrars would need to prepare their IT systems to capture data as per these standards and implement business processes in line with the Know Your Resident guidelines.
- State Portals, e-Forms and SSDG initiative being implemented in various states: One high potential application for UID can be as a User ID for citizens/residents to log into the State Portal to avail e-Governance services. These applications would need to be able to interface with the CIDR for UID validation.

Thus there is a two-way relationship between UID rollout and the rollout of these programs which would need to be factored in while planning the implementation of CIDR.

Legal dimensions of the UID program

A large portfolio of legal changes would be needed to implement the UID program. Key among these with which the CIDR implementation would need to align with would be:

- Passage of appropriate legislations/regulations at the central and state levels creating a legal framework around the Unique ID. These would include:
  a. Guidelines for roll out of Know Your Resident procedures
  b. Guidelines for usage of UID in citizen service delivery. Following are some examples:
    i. Provisions of Income Tax Act
    ii. Provisions of Value Added Tax Act
    iii. Provisions of Passport Act
  c. Laws/Regulations protecting privacy of citizen data
  d. Revisions to the Know Your Customer provisions in financial services under the Anti-Money Laundering Act, 2002
  e. Guidelines for processing of mobile phone subscriptions and other utility connections etc.

The alignment of legal and regulatory changes with the CIDR rollout is critical as a legal enforcement of these without appropriately ensuring readiness of CIDR can create severe bottlenecks in service delivery.

Environmental dimensions of the UID program

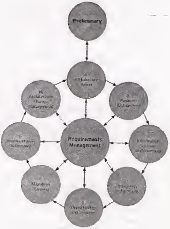
The UID program will play an important role in reducing usage of paper in Government and private sector by reducing requirements for producing copies of identity proof. This single step in itself can help position the UID program as a 'Green initiative'. The technology infrastructure for the CIDR is likely to be energy consuming. However, innovative measures such as dynamic capacity management can help setup Green IT infrastructure for supporting the UID. Each of these benefits can be used to promote usage of UID and made an integral part of the marketing program.

Our approach to creating the Enterprise Architecture for CIDR

We shall hinge our approach to this assignment on The Open Group Architecture Framework ("TOGAF ™"). While a detailed discussion of TOGAF may be out of context here, we have selected this framework for two distinct advantages it offers:

a. It provides a method to iterative consultations and designs that lead to an optimum solution and
b. It enables strong Requirements Management when iterative approaches to solve complex problems are required.

We illustrate below how TOGAF shall be applied to be specific case in hand. We shall start by creating the **Architecture Vision** and the **Business Architecture for the CIDR.**



Architecture Vision and Business Architecture for the CIDR

The Central ID Data Repository will be the core technology solution enabling Unique ID implementation. This technology solution will have three key roles to play:

- Capture and store biographic, photographic and biometric information of residents[2] of India
- Generate and assign an Unique, 12-digit ID number[3] for each resident
- Act as a means for identity and address verification[4] for various user agencies with a certain level of assurance

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[2] As defined in the context of Unique ID implementation

[3] As per the UIDAI specification

[4] As defined in the context of Unique ID implementation in the UID approach paper

Taking a business perspective, the CIDR is a key service offering of the Unique ID Authority of India. The success of the Unique ID program is dependent on:

a. The timely enablement of the CIDR
b. The quality of services offered by the CIDR perennially and
c. The adoption of CIDR services by various stakeholders to the greatest possible extent

In essence, success of the UID program will have significant dependence on the Speed, Reliability and Availability of CIDR on a perennial basis. We, therefore, define these as the three must-have features of the CIDR. These three attributes can be defined in the context of CIDR as:

Figure 1: Defining traits of CIDR service quality

Reliability: Credibility of the CIDR would be an important factor promoting its uptake among various user groups. In future, the result of a verification request from CIDR would make a difference to a common man. Therefore, the reliability of the CIDR is of paramount importance. In specific terms, the CIDR should not:

a. Issue a duplicate UID
b. Deny issuance of a UID wrongly

Both the cases will imply that a legitimate request for services from a resident is wrongly denied. In consideration of the above, the CIDR should feature a high degree of reliability. From a resident's standpoint, reliability would also translate into how securely the data provided to CIDR is managed.

Availability: The CIDR will be used round-the-clock perennially[5]. The non-availability of CIDR services could have significant impact on the functioning of a large ecosystem of people at partner agencies and their software applications which will rely on the CIDR being available for providing services. Such availability will not be limited to the software systems but also to the support systems that will be setup as part of the CIDR implementation.

Speed: The CIDR would need to be tuned to operate at high speeds consistently to deliver the nature of services it will be required to deliver. These would include:

a. 1:N de-duplication as part of issuance of UID
b. Response to verification requests – human and software initiated

Envisioning the CIDR – Users and Use Cases

The CIDR will be at the centre of a 'Federated Set of Databases'. The whole ecosystem of Partners envisaged by the UIDAI will comprise of two key user groups:

a. The Data Providers: This will include the group of agencies who will implement the Know Your Resident program. These would include Registrars, Sub-Registrars, Enrollment Agencies and Outreach Agencies. In addition, it would also include the 'Introducers'. Each one of these stakeholders has a key role to play in ensuring Data Quality of the CIDR and adherence to the Standards proposed by the UIDAI Committees.

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[5] It is, however, acknowledged that there could be variation in the loading of the CIDR infrastructure.

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b. The Data Users: This group could include a large ecosystem of 'institutions' (and individuals?[6]) who may seek the verification services of the CIDR. They would play a crucial role in creating a sustainable revenue model for the CIDR.

The other key users would be the UIDAI, the Managed Service Provider and various audit agencies whom the UIDAI may appoint. Keeping these in view shown below is a Level 1-illustration of our view of the key modules of the CIDR. Considering the above ecosystem, we can look at the following key functionality being delivered by the CIDR. More specifics could be worked out during the course of the assignment.

Users	Top Level Use Cases to be addressed by the CIDR application
External User	
Registrar	Register their users/systems with the UIDAI through the CIDR
	Interface their software systems for capture of resident details with the CIDR for submission of Resident details for de-duplication
	Submit cases for UIDAI's review in response to grievances received from residents for wrong/non-allocation of UID
	View status of resident enrollment requests submitted
Sub Registrar Enrollers Outreach groups	View status of resident enrollment requests submitted
	These agencies could have a software interface with CIDR for the citizen to view status of enrollment request (possibly hosted as a web service)
Customers of CIDR	Register for use of CIDR
	Will submit verification requests to the CIDR through a software solution
	Receive the verification request from CIDR
	Make payments for usage of CIDR services
Resident	Receive communication on being allotted a UID
	Receive communication on successful change of data
	Log grievances for redressal by the Registrars or by the UIDAI
Internal users	
UIDAI/CIDR staff	Registration of members of data provider and data user group
	Manage exceptions
	Accounting for CIDR revenues
	Detect frauds in the systems with the help of automated tools
CIDR Help Desk	Manage exceptions that may arise as part of logistics of UID management
Third party auditors	View audit trails of system usage
	Monitor system usage
UIDAI	Obtain MIS reports to help monitor progress of UID implementation across India

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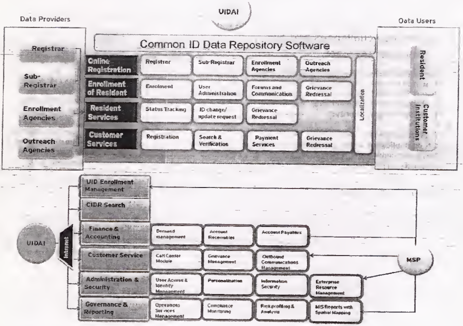
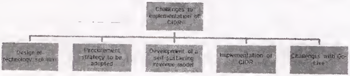
[6] It is to be determined by the UIDAI whether individuals (who are outside the umbrella of any institution – private or Government) will be granted access to the CIDR verification services.



Challenges in implementation of the CIDR

When the above use cases are studied in conjunction with the Service and Operational Level requirements that would surround the CIDR, it is evident that there are many design, development and implementation challenges associated with it.

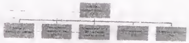

Challenges to implementation of CIDR
Design of technology solution
Procurement strategy to be adopted
Development of a self-sustaining revenue model
Implementation of CIDR
Challenges with Go-Live

We can structure these challenges into five broad categories.

a. Design of technology solution
b. Procurement strategy to be adopted
c. Development of a self-sustaining revenue model
d. Implementation of CIDR and
e. Challenges associated with Go-Live

In the following chapters we discuss key challenges in each area and our solution approaches. These solution approaches will relate to the phases of Information Systems Architecture and Technology Architecture phases of the TOGAF framework.

Technology challenges and our solution approach



The core technology challenges related to the CIDR flow from the biometric matching system. At the heart of the challenge is the enrollment process that would require the CIDR to perform the biometric de-duplication on a population of India's size with acceptable degrees of accuracy and turnaround time. Surrounding the challenge are issues of 'nearly difficult to predict' workloads on the system and security.

These translate into challenges for designing the computing system that would be required to perform reliable 1:N de-duplication within a definite period of time (assumed to be 24 hours) and issue a Unique ID to a resident. This is surrounded by considerations pertaining to information security, disaster recovery and business continuity. In this chapter we present our approach to addressing the above technology challenges of CIDR. This will thus map to

Design needs of biometric matching system

Key design goals for the biometric matching system

There are three primary goals in the design of CIDR's biometric matching system:

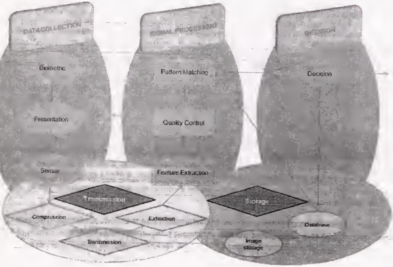
- The number of incorrect matches must be minimized
- The number of prints incorrectly found to not match prints actually in the enrolled database must be minimized
- The throughput rate of these comparisons must match the input rate of the prints (as averaged over a time scale appropriate for the system operational requirements), so as to prevent backlogs from developing.

Given these design goals, following would be the key challenges that will emerge.

Key challenges in large scale biometric matching

Note: We have studied the UIDAI Biometrics Standards Committee Report. For the purposes of illustration herein, we have made several assumptions. We understand that these may be different from what may get implemented. The objective herein is only to demonstrate our understanding of the problem and approach to solving it through illustrations.

The diagram below shows a generic biometric matching system. In utilizing biometrics for issuing Unique ID, it is to be understood that biometric matching is essentially based on statistical functions and are, therefore, subject to statistical errors. As a result, biometric systems are not 100% accurate. Thus in the overall biometric system proposed for CIDR, errors may creep into the system during collection, transmission and storage-retrieval. This can affect the accuracy of pattern matching and decision making processes.



Following are the primary factors that trigger challenges with respect to design of the CIDR's biometric system:

1. Non-exact nature of biometrics
2. Loss of information during capture and representation of the biometric data
3. Combinatorial explosion of number of matches required with increase in size of the database

A more specific analysis of the challenges that are introduced by the above factors is presented below:

- Claiming uniqueness of the biometric: The primary claim of the whole exercise is that we are able to assign a unique ID to every individual who is enrolled in the system. However, the ***uniqueness of the biometrics of a person is still a postulate***, albeit with very strong statistical evidence.

- ***The loss in information due to limitations of the capture setup or physical conditions of the body, and due the feature representation, there is a non-zero probability that two fingerprints or IRIS prints coming from different individuals can be called a match.***

  At the same time, these will also introduce variations in the biometric extracted from the same person at multiple instances of time, which introduces the possibility of two samples from the same person being judged as not matching.

- Defining acceptable error limits in the system: In short, the variations in physical conditions and data capture and representational errors lead to errors in the matching process. The errors are of two types:
  - False match or
  - False non-match

  A false match when comparing biometric samples from two different persons during enrollment would lead to denial of ID to a person, while false non-match during verification will lead to rejection of services to a person, which requires the verification.

Key Biometric Design Consideration: Quantifying these errors for the type of data that is captured, as well as establishing acceptable limits to the two types of errors for our application are critical in the design of the overall system. Establishing acceptable limits for errors would be an important decision to be taken by UIDAI.

- Need to use manual verification: In some cases, the automated algorithms will not be able to handle certain matches. One might have to fall back to manual verification in such cases. Creation of appropriate methods to efficiently carry out such verification is also critical to the success of the overall project. The use of face images that is captured during enrollment could be of immense benefit at this stage.

- Selection of appropriate biometric modalities: Use of fingerprints as the primary method of authentication is logical due to its accuracy, ease of use, and cost effectiveness. However, during the enrollment phase, one might decide to use additional modalities such as IRIS images to enhance the accuracy and speed to the de-duplication process. The selection of the right modalities for this phase is critical and need to be done based on studies on the effectiveness of these modalities on samples from the Indian population.

    - Note: These challenges have now been addressed in the UIDAI Biometrics Standards Committee Report to a great extent from an enrollment perspective. However, the modalities to be adopted during biometric verification, especially in remote areas, are likely to emerge further in due course.

- Computational cost of de-duplication: During the creation of UID for a person, their biometric data is captured and compared against every other person in the database to establish the uniqueness of the new ID that is created. The computational cost will be driven by various business drivers which will include the acceptable level of accuracy and various Operational and Service Level requirements of the CIDR.

    - Prior estimates regarding computational costs of biometric matching: Based on prior experience, it is estimated that systems of 20,000,000 enrolled persons, with input rates of 20,000 per day, should be able to operate within design limits of 5% false non-matches and 0.1% false matches under system decision policies tuned during implementation. A processing rate of 500,000 matches per second should be sufficient for one-day processing in a four-finger system[7].

The above are primarily the challenges that need to be overcome at the CIDR. However, they are not independent of the design of the overall system. The overall system that includes data capture, representation, matching, and result handling, need to be considered as parts of a system to solve the above challenges, and not in isolation.

We envisage the following problems that need to be addressed at each stage of the system. For the sake of explanation, we assume the modalities that are to be used are limited to fingerprints (10-prints), IRIS, as well as face.

- Biometric capture device: The technology of capture, its specifications, the user interface and the capture procedure should all be selected or designed based on the primary requirement to provide the best quality of data for de-duplication and verification. However, the factors that would typically oppose the selection of the best available ones are the cost and the throughput, which has to match the scale of operations that are planned. Identifying the right balance is critical here.

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[7] Refer "Large Scale Civilian Biometric Systems–Issues and Feasibility" by James L. Wayman, Director - U.S. National Biometric Test Center

- Representation of the biometric samples for storage and communication: The factors that needs to be considered here are:
  - Size of representation and the speed of the communication link
  - Loss of information in the representation
  - Interoperability of the algorithms with representation from different capture devices, and
  - Ability to achieve vendor independence, both at the capture side, as well as at the matching centre.
- Communication link: The primary concerns here include the availability, speed, reliability, and cost of the communication link and the *ability to provide security and privacy of the data being transmitted through the channel.*

As details of the nature of biometrics to be used as part of UID are not known, for the purposes of discussions on matching, we shall assume in the following discussion that fingerprints are to be used. A similar approach can be adopted even if any other biometric such as iris is used.

Design considerations for automatic biometric identification systems ("AFIS")

Performance parameters for AFIS

There are five important, non-independent parameters that govern the performance of Automatic Fingerprint Identification Systems. These are:

i. Penetration rate, reflecting the expected percentage of the fingerprint database to be compared to a sample print. The system penetration rate reflects the matching efficiencies achieved by placing the database fingerprints into "bins" based on classification type, ridge count or some other measure endogenous to the fingerprint itself, and gains based on exogenous "filtering" techniques, including identification of the finger in multiple finger systems and identification of the customer's gender.

ii. Bin error rate, or probability that a search for a print in the database will be unsuccessful because the sample and template prints were placed different "bins"

iii. Single comparison false match rate, or probability that two non-matching prints will be incorrectly matched

iv. Single comparison false non-match rate, or probability that two matching prints will be incorrectly not matched when compared and

v. One-to-one comparison rate of the hardware - **It is a function of the hardware processing speed, the template size, and the efficiency of the matching algorithm. This could be one of the single largest dependencies in design of the CIDR.**

One of the key factors impacting the performance of the AFIS will be the decision policy implemented. We will explore some of the key options available to UIDAI in this respect prior to determining the throughput rate that would be required for the CIDR.

Decision system: Policy decisions relating to biometric match decision

The decision subsystem implements system policy by directing the database search, determine "matches" or "non-matches" based on the distance measures received from the pattern matcher, and ultimately make an "accept/reject" decision based on the system policy.

There are four policy options that can be taken in a civilian scenario:

1. Declare a match for any distance lower than a fixed threshold and "accept" a user on the basis of this single match

2. Declare a match for any distance lower than a user-dependent, time-variant, or environmentally-linked threshold and require matches from multiple measures for an "accept" decision
3. Give all users three tries to return a low distance measure and be "accepted" as matching a claimed template
4. In the absence of a claimed template, the system policy could be to direct the search of all, or only a portion, of the database and return a single match or multiple "candidate" matches.

The decision policy employed is a management decision that is specific to the operational and security requirements of the CIDR. The CIDR decision engine could be trained over a period of time as data available increases.

In general, lowering the number of false non-matches can be traded against raising the number of false matches. The optimal system policy in this regard would depend both upon:

- The statistical characteristics of the comparison distances coming from the pattern matcher and
- The implications of false match and false non-match within CIDR

In the following sections we have outlined our solution approach along with illustrations of how they will map back to solving the problem in hand.

Determination of the system throughput required for the CIDR

The System Throughput requirement will be key input for the overall Technology Architecture to be designed. Following is an illustrative approach that could be taken to determine System Throughput requirements for the CIDR.

System performance of the CIDR is related with the acceptance and rejection of applicants as represented by an ensemble of prints. As precise performance prediction will depend upon system decision policy. The approximate equation for the system throughput rate, T, depends upon:

- the comparison rate, C
- the system penetration rate, Psys
- the number of records in the database, N
- and the number of fingers to be matched, m

We have given the lower case symbol, m, to the fingers to be matched to differentiate it from the previously used, M, the number of fingers collected, upon which ensemble binning is performed. In all cases, $m \le M$.

In a multi-finger system, initial search can be done on a subset, m, of the collected fingers, M. Any matches determined for any finger can be verified against the remaining M - m fingers. Under the assumption that no matches will be found, the throughput rate can be written as:

$$T = C / (P_{sys} \times N \times m).$$

Changes of assumptions regarding finger binning independence increase penetration rate and decrease throughput. Any matches found (false or correct) require an additional M - m comparisons, further decreasing throughput, so this equation is an optimistic upper bound. This throughput rate must match the customer input rate, Z, as averaged on a time scale driven by operational requirements. Assuming that the applicant throughput must match applicant input on a daily basis, we can write:

T, Throughput required = [C comparisons/sec x O operational seconds/day]/[Psys x N comparisons/finger x m fingers/resident] = Z new resident applicants/day[8]

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[8] Designed by Dr. James L Wayman, Ph.D

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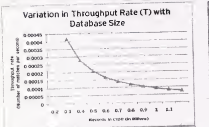
Using the above equation, the following simulations could be done to determine the following:

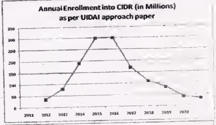
a. **System throughput required** - which will define the overall performance requirement of CIDR
b. **Number of Comparisons required per second** - which will be a key selection parameter for the biometric matching engine and
c. **Number of Operational Seconds required per day** - which will determine SLA and OLA requirements of CIDR and the computing capacity required

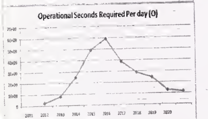
We present below illustrations based on the projections of enrollment provided by UIDAI in its approach paper[9].

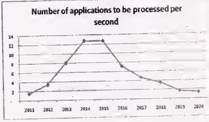
Important note: The sequence of illustrations shown hereafter is based on the projected annual enrollment numbers provided in the UIDAI approach paper. Kindly note that this is only for illustration purposes to demonstrate our approach and we have made reasonable assumptions to perform these projections. These are approximations and have been developed for the limited purpose of this proposal. More sophisticated models can be developed for simulation during the course of the engagement.

In a real life scenario, the figures may vary significantly on a day-to-day basis. It will also depend on the technology and the algorithms used. The actual estimates may vary significantly and hence an important Design Principle we are proposing is Dynamic Capacity Management. This will also enable Green Computing and achieving a low Total Cost of Ownership


Variation in Throughput Rate (T) with Database Size


Annual Enrollment into CIDR (in Millions) as per UIDAI approach paper


Operational Seconds Required Per day (O)


Number of applications to be processed per second

Assuming that the enrollment program results in increase in CIDR data as projected by UIDAI in its approach paper, appropriate trade-offs would need to be made between the required performance of the biometric matching engine with processing power for design of the Technology Architecture. The following key inferences can be derived from the above charts:

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[9] Refer page 15 of UIDAI approach paper

a. As data increases in CIDR throughput will reduce exponentially.

b. The strategy for enrollment will need to be aligned to system capacity growth. As can be seen, the current enrollment projections will result in a sharp spike in computational power.
  - Increasing system capacity beyond a point may become a constraint or economically unviable.
  - The MSP may incur maximum costs of hosting the CIDR infrastructure during a certain period as per current projections. This may need to be taken into account in designing the Technology architecture and the PPP model.

The above inputs on requirements will be used to design the Technology Architecture. This is discussed in detail in a later section of this document following this part on biometrics[10].

Encryption and compression in transmission and signal processing subsystems

A very important design consideration is the balance that would need to be achieved in design of the CIDR between:

- Data compression and how it will impact quality of biometric matching
- Data encryption and how it will affect speed of biometric matching

The biometric data for CIDR is likely to be transmitted from a large number of locations. Fingerprints and facial images submitted to a centralized system may come from widely distributed sources. To minimize required transmission bandwidth, data compression may be required. A need for encryption may also arise.

The signal processing sub-systems downstream are designed to process the original image, so expansion of the compressed image is always required prior to processing. The compressed image may be most suitable for storage, however. Compression/expansion may be "lossy" or "loss-less" with regard to the quality of the expanded signal, but lossy compression algorithms generally result in much greater bandwidth reduction. Compression standards for "lossy" techniques exist for fingerprinting (Wavelet Scalar Quantization, FBI standard IAFISIC-0110v2, 1993) and facial imaging (JPEG, as in Data Format Standard ANSI/NIST CSL-1-1993).

Compression/expansion algorithms are designed and tested to work well on signals of an expected quality. If the sensors transducing the original signal do not meet the expected technical quality requirement (lower sampling rate, for instance), losses during the compression/expansion process may be unpredictable. Further complicating the question of quality loss is that technical measures of degradation (mean squared differences, greatest difference) may not directly relate to increases in system error rates. ***The relationship of sensor quality and compression to system error rates is relatively unknown for any biometric system.***

The signal processing sub-system takes the now degraded image of the original biometric pattern and converts it into a "feature vector1". The intent is to distill into this vector the information in the original biometric data that is time-, presentation-, sensor-, compression- and transmission-invariant. These algorithms are always highly proprietary. They all share the property of being non-invertible, meaning that the original pattern cannot be reconstructed from the feature vector. **Thus whether biometric data should be compressed or encrypted is a very important CIDR design decision.**

Other key implementation considerations – Frauds and identity thefts

The technology architecture has to a certain degree dependence on the business process that will be designed for enrollment especially from the standpoint of preventing frauds and identity thefts. Some of these considerations would be as follows.

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[10] Biometric verification involves matching a biometric sample against a known reference of the same person to find out whether it is presented by the right individual. This is called a 1:1 match. In contrast with the 1:N de-duplication for issuance of the UID, this would be supported by more biographic data which may help narrow the search universe and would be relatively easier (when compared to the core biometric matching engine) to design.

Biometric systems enrolment process

For interoperability purposes, the enrolment process must be standardized and certified. This must include

a. Data quality control (biometric and non-biometric)
b. Usability for the enrolment application and
c. Operator training for service personnel
d. The individual to be enrolled must be made aware of, and understand, the purpose and range of the application intended.
e. The individual should have an opportunity to view and verify whether the identity data the system collects is correct.
f. There must be equivalent and acceptable fallback solutions to prevent discrimination against people not able to enroll (i.e. in case of failure to acquire biometric traits).
g. There must also be country wide certified procedures for "un-enrolment" or data modification, operated by strictly authorized and strongly supervised intermediaries and transparency must be offered to the data owner.

Biometric data storage

Some of the following considerations would have an impact on the technology architecture.

- Biometric data should never be stored in their raw format (e.g. a high definition photo of a fingerprint). Instead, encrypted templates should be used which achieve the same matching result but reduce the risk of identity theft and the likelihood of "function creep".
- Biometric data should not automatically lead to the connected personal data.
- Processes should be defined that enable enrolled individuals to have their identifying stored data revoked or corrected when the data are flawed or of poor quality.

Appropriate matching procedures

There is need to define and implement a standardized matching algorithm, calibration process, and flexible user interface administered by well-trained, certified and suitably supervised operation personnel. Biometric matches should – wherever possible – only be based on biometric-only matches, excluding the possibility of linking with related personal data.

Biometric data security and verification procedures

Since biometric technologies attempt to address security relevant challenges, security requirements need to be defined in detail and at an international level where possible. For instance, the following security practices may be implemented:

- When using biometrics for a secure identification process, the complete security cycle should be considered (i.e. enrolment, storage, acquisition, matching and the entire back-end system).
- Enrolment and verification could be performed using '**live and wellness**' detection, especially in unattended environments
- Multimodality (meaning more than one biometric identifier – e.g. facial recognition and fingerprint) may help prevent spoofing
- Matching against tokens yields the highest security level and may therefore be preferred.
- Implementing an effective key management process can help protect personal data

The Ernst & Young team has considerable experience and exposure to the different biometric technologies both from the research stand point as well as the technologies that are available and their maturity level in real-world use. Our areas of expertise include:

- Design of biometric algorithms
- Competitive evaluation of technologies and algorithms
- Issues involved in practical implementation of biometric systems, and
- Issues involving security of biometric systems as a whole

Our expertise will assist UIDAI in taking key design decisions and would be of significant value to UIDAI during implementation of CIDR.

Our initial thoughts on the Biometrics Design Standards for UID Applications

Following were some of our initial thoughts on the biometrics standards published by the committee set up by UIDAI. We thought sharing these here might be useful to the UIDAI. It is very likely that the committee has already evaluated these options in detail.

- We are pleased to see that the UIDAI committee considered ISO/IEC standards.
- In our view, based on the limited time we have had to study the document, 19795-5 is a reduced resolution standard intended for e-passport applications. We should be able to do much better than this standard.
- Regarding fingerprinting, JPEG is not yet approved by the Federal Bureau of Investigation for use with 500dpi images because there has been no testing. We may wish to study this further.
- The standards document recommends use of uncompressed images for fingerprints; but only slaps prints. This may require use of some of the new contactless fingerprint sensors that can capture area equivalent of the rolled prints in as less time as required for slap.
- Regarding 19795-2, the NIST MINEX tests have showed that error rates double with 19795-2 compliance as compared to vendor proprietary templates. We feel the use of extended data is an area that could be studied further.

Solution design for the CIDR

Key Information System challenges

From the above discussion it is evident that the Information System would need to designed for the following challenges:

- How to cater to widely varying enrollment loads with likely peak loads in the range of 1 Million enrollment requests per day?
- How to rapidly scale up of the application where in data could be in the range of a few Terabytes and in not so distant future, Petabytes?
- How to ensure 24x7x365 availability of CIDR since delays due to backlog cannot be cleared easily and businesses that depend on UID services would come to a halt?
- How to keep the TCO low by keeping hardware and software costs low?

The CIDR Information System Architecture

We would like to summarize our solution approach as follows. Since the de-duplication happens on a very huge data set (1 billion identities), it is important to come up with techniques that ensure that the turnaround time for the search results is < 24 hours.

Key approaches that we may apply would be:

- Multi-level data partitioning
- Parallel high performance search
- Dynamic capacity management
- Cloud scale computing with commodity computers and data replication
- End-to-end security

Multi-level data partitioning

Since the amount of data is very huge, the CIDR application cannot search through entire data set as it would be infeasible given the performance metrics. The data has to be partitioned so that de-duplication and verification searches work on a smaller set of data. This would need multi-level data partitioning strategy. This means that data is first partitioned on 'Feature-A' (or attribute A) and each resulting partition is further partitioned on 'Feature-B' and so on.

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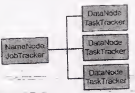
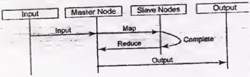
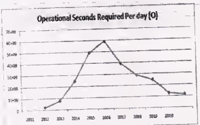
Parallel high performance search

Given now that we are working on a smaller data set which is still huge, how can we exploit parallelism in the search criteria so that we can quickly look for existing duplicates? To illustrate our approach, one of the possible solutions that may be evaluated is Apache Hadoop. We have provided below a brief description.

- **Apache Hadoop**: Apache Hadoop is a software framework (platform) that enables a distributed manipulation of vast amount of data. This can be thought of as a model of Platform-as-a-Service (PaaS). At the heart of its design is the MapReduce implementation and HDFS (Hadoop Distributed File System). Shown below is an illustration of how the implementation will work.







- **MapReduce:** This is a software framework that supports distributed computing on large data sets on clusters of computers (or nodes). It is the combination of two processes named Map and Reduce. In the Map process, the master node takes the input, divides it up into smaller sub-tasks, and distributes those to worker nodes. The worker node processes that smaller task, and passes the answer back to the master node. In the Reduce process, the master node then takes the answers of all the sub-tasks and combines them to get the output, which is the result of the original task.

  The advantage of MapReduce is that it allows for the distributed processing of the map and reduction operations. Because each mapping operation is independent, all maps can be performed in parallel, thus reducing the total computing time. This can help address the requirement that was stated earlier for computing time.

- **HDFS:** The complete introduction to HDFS and how to operate on it is beyond the scope of this approach paper. From the perspective of an end user, HDFS appears as a traditional file system. You can perform CRUD actions on files with certain directory path. But, due to the characteristics of distributed storage, there are "Name Node" and "Data Node," which take each of their responsibility.

  The Name Node is the master of the Data Nodes. It provides metadata services within HDFS. The metadata indicates the file mapping of the Data Node. It also accepts operation commands and determines which Data Node should perform the action and replication. The DataNode serves as storage blocks for HDFS. They also respond to commands that create, delete, and replicate blocks received from the Name Node.

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JobTracker and TaskTracker: When an application is submitted, input and output directories contained in the HDFS should be provided. The JobTracker, as the single control point for launching the Map Reduce applications, decides how many TaskTracker and subordinate tasks to be created and then assigns each sub-task to TaskTracker. Each TaskTracker reports status and completed tasks back to the JobTracker. Usually one master node acts as the Name Node and JobTracker and the slave acts as the Data Node and TaskTracker.

Relational Databases in the context of CIDR

Relational Databases are typically designed for Transaction Processing. The data partitioning would definitely help in improving the search performance. RDBs would be very much needed for uploading the data into CIDR repository because of the ACID properties. However for the high rate of search transactions, the following observations can be made:

- Most RDBs cannot deliver required performance on commodity hardware.
- For the required throughput rate, the hardware required would be enormous not to mention licensing costs.
- Most of Web scale service providers use Hadoop DFS because it meets the search requirements well and it is free.
- Many DB features are not required for the search that we are interested in.

Concluding, we see that appropriately sized, cost-effective combination of an RDB and Apache Hadoop can be considered for the CIDR solution. Such a solution is feasible and keeps the TCO comparatively much lower.

An example enrollment flow

The search proceeds in parallel on each biometric, say for each finger. Based on the multi-level partitioning, based on the inputs the applicable data-set are identified. For each biometric, let us say that we use Apache Hadoop. The attributes of a biometric can be used for parallelizing the search in HDFS. The resulting set is quickly narrowed down and the decision can be made. Exceptions are sent off to a different processing flow. Once we know that there are no duplicates, the enrollment data is inserted into a RDB. A copy is propagated in real-time to HDFS.

Reducing vendor lock-in and addressing issues around international trade restrictions

Based on the illustrative approach we have provided above, we would like to highlight some of the following as the key measures we will undertake to reduce vendor lock-in and address issues around international trade restrictions.

1. Use of commodity hardware: Through smart architecture design we believe it is possible to use commodity hardware to support CIDR operations. An example will be use of 4 to 8 core system versus 64 core systems. The bidder shall be required to investigate and assure that even in future there won't be any foreign Government export control.
2. Use of multi-source or open source platforms
3. Use of standard processor architectures so that it is widely available
4. No use of software whose Intellectual Property and source cannot be assigned to UIDAI
5. Virtualization to remove hardware dependencies to the greatest possible extent
6. Treatment of licensed software: Ideally any licensed software must work on more than operating system. It should meet goals of interoperability. Data stores must use configurable databases and the schema must be open for inspection and allow us to write utilities.
7. Security systems: Any security (encryption) scheme that exploits in-built security features of the Unique ID itself for requests or responses will be preferable to security products that need special approval from foreign source governments.
8. No products from countries which are not very friendly with India.
9. No proprietary software whose interfaces are not open and not standard.
10. All products used shall be expected to conform to open standards. Extensions to improve capabilities can be limited or disallowed.

11. Monolith tight integration between solution layers can be avoided and
12. Usage of standard communication protocols.

Hadoop, W3C web services, http, ANSI SQL etc. are good examples which satisfy all the requirements. Similar ideas could be explored during the course of the engagement.

Workload analysis and design of Technology Architecture

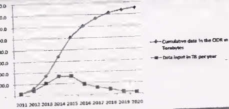
Based on the business analysis similar to the one shown in the earlier section on biometric matching, inputs may be derived for **Workload Analysis and Design of the overall ICT infrastructure**. Projections can be made of the required database size, data write speeds and of network – in both batch and real time update modes. These can be subsequently used as inputs for the non-ICT infrastructure. Following are illustrative charts based on the **Demographic data standards**[11] and Biometrics Standards released by the respective UIDAI committees.

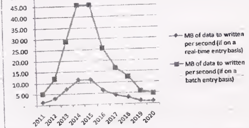
Based on our initial assessment, the size of the biometrics capture file could have a significant impact on the overall size required for the CIDR storage requirements. A balance needs to be struck between the accuracy needs and the performance requirements. This could be done through more sophisticated simulation models that can be developed during the course of the engagement.

For the purposes of illustration, our initial assessment of the Biometrics Standards Committee Report reveals that the template size of raw images (lossless compression), without compression would be around 10 MB, and with loss-less compression, we would be able to reduce it to 6MB or so.

Our initial estimate prior to release of these standards was around 3MB, assuming WSQ compression.

Our estimates of data size with WSQ compression (prior to release of Biometrics Standards Report)





Our (illustrative) estimates of data size based on the Biometrics Standards Report

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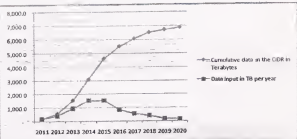
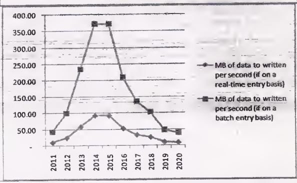
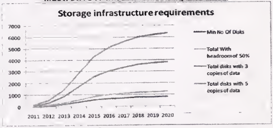
[11] "Demographic Data Standards and Verification procedure (DDSVP) Committee Report", Ver

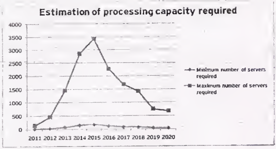




Based on the above estimates, IT infrastructure requirements could be arrived at. Following are some illustrations.

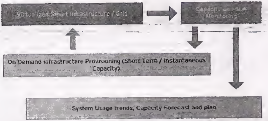
Illustrative IT infrastructure requirements





Dynamic capacity management and Hierarchical Data Storage

As can be seen, there will be a wide variation IT infrastructure needs for the CIDR. An important Design Principle for the CIDR will, therefore, be Dynamic Capacity Management. This will also enable Green Computing and achieving a low Total Cost of Ownership.


Virtualized Smart Infrastructure / Grid
Capacity and SLA Monitoring
On Demand Infrastructure Provisioning (Short Term / Instantaneous Capacity)
System Usage trends, Capacity Forecast and plan

Conventional infrastructure capacity management techniques are focused on creating a capacity plan and forecast based on static models. The drawback of these techniques is that the infrastructure tends to be either oversized or undersized. In the specific case of CIDR, infrastructure requirements will vary

A dynamic capacity management system using a continuous feedback mechanism will help the MSP tune the CIDR model thereby providing a more accurate forecast of the infrastructure capacity requirements. In addition, the installed capacity can be optimally utilized by using a virtualized smart infrastructure or where the components can be turned off or on dynamically thereby reducing the power and cooling requirements in the data center. The medium to long term capacity needs to be made so that there is sufficient lead time for adding additional capacity, if necessary.

Disaster recovery and business continuity planning for the CIDR

While the objectives of Disaster Recovery ("DR") and Business Continuity Planning ("BCP") include ensuring availability of the systems and infrastructure, data recovery without any loss shall be the key priority for CIDR given its sensitivity and the implications of its loss. We would consider the following factors while developing the BCP/DRP for the CIDR:

- Identify and incorporate guidelines from leading international standards like BS 25999, PAS 56, ISO/IEC 24762:2008
- Identify the linkages with the Risk Management Framework established by UID
- Develop a relevant BCP/DRP

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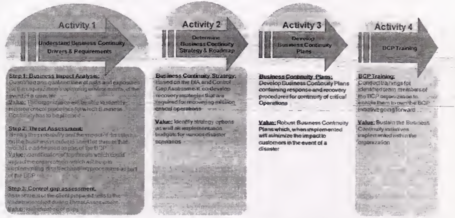
- Address a multitude of risks/threats including geo-centric, personnel, technological, malicious, infrastructural risks, as well as program risks that may arise due to potential political risks or loss /decrease of funds
- Train the UID staff on BCP/DRP through training and awareness workshops and
- Develop a Crisis Management Process.

We will use our EY global methodology for Business Continuity Planning as a base to start the project. This methodology will be aligned to the BSI BS 25999 standard. The diagram below illustrates our standard methodology for Business Continuity Planning which shall be used for preparation of the Business Continuity Plan for the CIDR.


Activity 1
Understand Business Continuity Drivers & Requirements
Activity 2
Determine Business Continuity Strategy & Roadmap
Activity 3
Develop Business Continuity Plans
Activity 4
BCP Training

Step 1: Business Impact Analysis: Quantified and qualified view of risks and exposures for the organization's operating environments, in the event of a disaster
Value: The organization will be able to identify mission critical processes for which Business Continuity has to be planned

Step 2: Threat Assessment: Identify the probability and the impact of disasters on the business in order to shortlist threats that would be addressed as part of the BCP
Value: Identification of top threats which could impact the organization which will help in implementing disaster handling procedures as part of the BCP

Step 3: Control gap assessment. Assessment of the client preparedness to the threats identified during Threat Assessment
Value: Identification of gaps

Business Continuity Strategy: Based on the BIA and Control Gap Assessment co-develop recovery strategies that are required for recovering mission critical operations

Value: Identify strategy options as well as implementation budgets for various disaster scenarios

Business Continuity Plans: Develop Business Continuity Plans containing response and recovery procedures for continuity of critical Operations

Value: Robust Business Continuity Plans which, when implemented will minimize the impact to customers in the event of a disaster

BCP Training: Conduct trainings for identified team members of the BCP organization to enable them to own the BCP initiative going forward

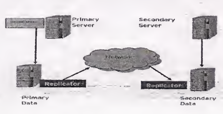
Value: Sustain the Business Continuity initiatives implemented within the organization

From a disaster recovery standpoint, we illustrate below some approaches that we feel may be relevant for the CIDR for Data Recovery. These approaches may require high availability of at least two data center facilities (both as active data centers) with a third data center (as passive) for backup.

Approach 1: Replication by Storage subsystem

Writes are intercepted by storage subsystem firmware and written to other storage subsystem. Servers are not involved in replication hence independent of server hardware, system software and applications. In storage subsystem based replication method, data is replicated by storage subsystem. All writes are intercepted by storage subsystem firmware and written to other storage subsystem. This replication is independent of server hardware, operating system. Following is a pictorial presentation of storage subsystem based replication.

Replication By Storage Subsystem



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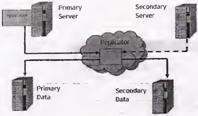
Storage network based replication

In storage network based replication method, the data written to storage subsystem using an appliance at switch level and this appliance copies data to secondary storage subsystem also. All traffic is directed through an appliance, there may be a performance bottleneck with increased volume of data. This type of replication is completely independent of either server system or storage subsystem, hence ideal for heterogeneous environment.

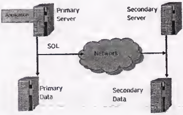
Storage Network Based



Approach 3: SQL Replication

In this method, the replication feature is built into the application where the SQL queries are performed on both the database copies as two-face replication and the transaction is not completed unless committed in both the data stores.

SQL Based Replication



Securing the CIDR - Information Security Design Considerations

Having done the foregoing analysis of the CIDR, our approach to Information Security Architecture for the CIDR shall be as follows.

Key design principles

The key design principles for the Information Security Architecture and Policies of CIDR shall be:

- Defense in Depth – Layered Security
- Principle of Least Privilege

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- Secure by Default
- Fail Securely
- Open Design – Avoid Security by obscurity
- Minimum Required Functionality – Reduce Complexity
- Minimize User Controllable Input – Reduce Attack Surface
- Centralization through Modularization – Helps with Economy of Mechanism, Simplicity as well as Least Common Mechanism
- Establish Conservative Trust Boundaries - Regard External Systems as insecure

Securing CIDR Data

Since the CIDR as a system is to be used to verify information but not provide the same, it need not store the information. It would suffice if a cryptographic hash of the information is stored. As a result, a complete compromise of the infrastructure will result in disclosure of the hashes only. Provided a proper hash algorithm is chosen, the likelihood of recovering personal information from the retrieved hashes is slim

Key Work steps – Information Security Architecture and Policy

The key work steps for design of Information Security architecture and policy shall be:

- Formulate an information catalogue that serves as an inventory of all information managed by the system
- Classify the information based on its sensitivity / criticality
- Identify security objectives (confidentiality, integrity, availability) based on the outcome of the information classification exercise
- Ascertain the system's user population and document the user access channels to be supported
- Understand the operating environment of the system and identify constraints imposed by external systems that the system under development interfaces with
- Perform asset centric, system centric and attack centric threat modeling exercise
- Prioritize threats and identify relevant security controls
- Formulate an information security architecture factoring in the information processed by the system, its intended user base, its operating environment and its potential attack surface

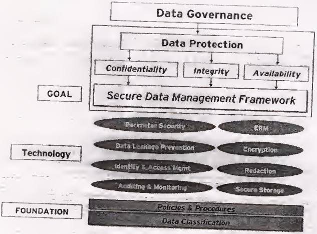
Methodologies to be used to prepare the Information Security Plan

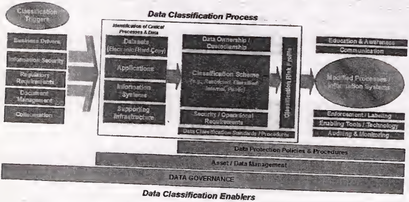
Data security is one of the most important considerations for the Information Security Plan of CIDR. In light of this, we shall describe briefly four key methodologies that we will use for this assignment:

a. Data classification which is at the foundation of Information Security
b. Prevention of data leakage
c. Data protection program and
d. End point security

Methodology for data classification

Data Classification is the fundament component of Data Governance and Information Lifecycle Management (ILM), and as such, should be supported through appropriate governance and oversight to achieve user compliance with program objectives. Our Data Classification Methodology is based upon our industry experience and industry leading practices to manage the classification of information throughout its lifecycle.

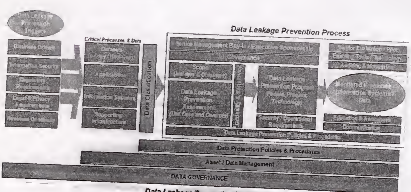



Data Classification Process
Classification Triggers
Business Drivers
Information Security
Regulatory Requirements
Document Management
Collaboration
Identification of Critical Processes & Data
Data sets (Electronic/Hard Copy)
Applications
Information Systems
Supporting Infrastructure
Data Ownership / Custodianship
Classification Scheme (e.g., Restricted, Classified, Internal, Public)
Security / Operational Requirements
Classification Risk Profile
Data Classification Standards / Procedures
Education & Awareness
Communication
Modified Processes / Information Systems
Enforcement / Labeling
Enabling Tools / Technology
Auditing & Monitoring
Data Protection Policies & Procedures
Asset / Data Management
DATA GOVERNANCE

Data Classification Enablers

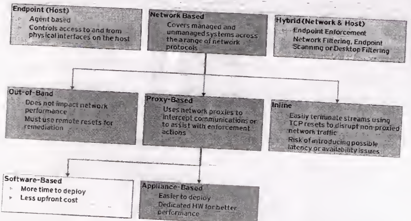
Methodology for Data Leakage Prevention

Data Leakage Prevention is the practice of detecting and preventing confidential information from being "leaked" out of organizations' boundaries for unauthorized use; which may be thought of as physical or logical.


Data Leakage Prevention Process
Critical Processes & Data
Business Drivers
Information Security
Applications
Information Systems
Supporting Infrastructure
Data Classification
Senior Management Buy-In / Executive Sponsorship
Governance
Scope
Data Leakage Prevention Assessment (Use Case and Controls)
Data Leakage Prevention Program
Security / Operational Requirements
Vendor Evaluation / Pilot
Auditing & Monitoring
Education & Awareness
Communication
Data Leakage Prevention Policies & Procedures
Data Protection Policies & Procedures
Asset / Data Management
DATA GOVERNANCE

Data Leakage Prevention Enablers

Following are some key deployment options that can be considered for the CIDR.


Endpoint (Host)
Agent based
Controls access to and from physical interfaces on the host
Network Based
Covers managed and unmanaged systems across the a range of network protocols
Hybrid(Network & Host)
Endpoint Enforcement
Network Filtering, Endpoint Scanning or Desktop Filtering
Out-of-Band
Does not impact network performance
Must use remote resets for remediation
Proxy-Based
Uses network proxies to intercept communications or to assist with enforcement actions
Inline
Easily terminate streams using TCP resets to disrupt non-proxied network traffic
Risk of introducing possible latency or availability issues
Software-Based
More time to deploy
Less upfront cost
Appliance-Based
Easier to deploy
Dedicated HW for better performance

Methodology for creating the Data Protection Program for CIDR

Data protection is pervasive in its scope, distributed in its implementation, and a challenge to control effectively (enterprise wide). To manage these complexities, a Data Protection Program must be in place to govern and administer how data protection will be realized in the enterprise.

CIDR would need a comprehensive data protection program to reduce risk, improve security, enable effective business continuity and disaster recovery, and comply with internal and regulatory issues. The diagram below illustrates how this can be achieved in the case of CIDR.

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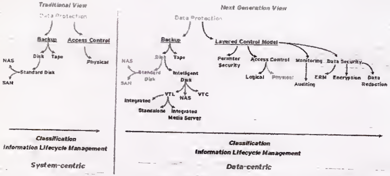
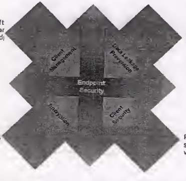


EY may in consultation with UIDAI include creation of a Data Protection Program in the Information Security Plan and Policies as an action item for the CIDR management team.

Methodology for end-point security

Endpoint systems are vulnerable and represent one of the most likely points of vulnerability for the CIDR. As part of the Information Security Plan four major components could be assessed to provide for complete endpoint security.



Provides device, OS, and soft management solutions to mar the configurations on the end

Provides prevention and detection of unauthorized use of confidential being leaked from the endpoint

Provides file, system and application encryption to protected against unauthorize use on the endpoint

Provides protection against client side attacks which target inherent vulnerabilities within the system

The above portfolio of methodologies shall be used along with methodologies for other relevant areas such as secure messaging while creating the Information Security Plan and Procedures for the CIDR.

Design of non-IT infrastructure

The non-IT infrastructure of CIDR will also present significant design and technology challenges. Its performance will play a vital role in ensuring security and availability of the CIDR. Since specifics will emerge only during engagement execution, we shall outline here only key work steps and an initial set of considerations which we may take in designing the non-IT infrastructure.

Our services for design and architecture of Data center shall cover the following key design areas:

- Interiors

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- Electrical
- Air Conditioning
- Fire Suppression
- Security & Surveillance
- Building Management Systems and
- Miscellaneous Support systems

Minimum N+1 engineering approach

We will use minimum, "n+1" redundancy-engineering approach for all designs. The total capacity requirement of any specific element of infrastructure is calculated based on the design assumptions. This capacity requirement is then spread across "n+1" (or "n + multiple") infrastructure components with "n" components being sufficient to carry the full capacity requirement. This design thus ensures that even if one of the components were to fail, the remaining "n" components would automatically take up the load with absolutely no reduction in the level of performance of the Data center.

Following is a listing of key activities that will be carried out in each of these areas.

Design phase

- Interiors: Detail design shall be submitted indicating the size, orientation of seating, entry / exit points for each compartment and storage locations. On receiving the concurrence / acceptance from UIDAI, construction drawings shall be issued to the site. Catalogues of major items like floor tiles, laminates, carpets & paints shall be provided to the client for selection of colors and patterns of their choice. The selected items shall be signed off and accordingly implemented.
- Electrical: Single line diagram encompassing the whole facility shall be issued during planning phase. Detailed specifications of various equipments being employed shall be submitted for approval. Design inputs will be provided in process of vendor evaluation and technology selection. Periodic supervision shall be carried out to ensure quality during the execution phase.
- Air conditioning: Detailed design and basis of calculation shall be provided for precision air-conditioning units. Comfort A/c for shall be implemented as per UIDAI requirements.
- Fire Suppression: Detailed design indicating the discharge nozzles, manual call points, detectors, sounders, pipe lines, response indicators, abort / release switches and extinguishers shall be submitted before implementation for comments. Site construction drawings shall be issued and supervision shall be carried out during execution.
- Security: Detailed design showing the location of various levels of security like reader, biometric palm geometry, fingerprint, push buttons, closed circuit television cameras and security cabins/ desks shall be provided to suit the requirements of the data center.

Note: Designs and drawings once issued to site shall not be changed. Changes during implementation shall be carried out by conducting joint meeting considering the impact on cost and schedule with mutual agreement.

Data center Layout

Typical building layout will include the Server Room, Telecommunication and Equipment Rooms, Support Staff Office, Entrance Rooms, DC Electrical and Mechanical Room, UPS Battery Room, NOC, Storage and Loading Docks, Staging and Build Room and General Office Space. The building of IDC will be consistent with UIDAI requirements, and will take into account various parameters such as:

- Floor loading requirements: concentrated load static uniform floor load. Dynamic rolling load)

- Service clearance requirements (clearance requirements on each side of the equipment required for adequate servicing of the equipment)
- Air flow requirement
- Mounting requirement
- DC power requirements and circuit length restrictions
- Equipment connectivity length requirements
- Support area requirements
- Security requirements

Electrical services

Tier-3 and above data centers have high availability requirements and continuous availability of electrical system is paramount. Considering Indian conditions, where active redundant power supply may not be available, adequate power backup and captive generation planning will need to be made to satisfy the up-time needs of the IDC. Multi-Level Redundant Power, Bonding and Grounding and Separate fault-tolerant supply will be planned.

Mechanical services (HVAC and others)

HVAC will be designed on the basis of a careful analysis of the systems planned to be hosted in various parts of the Datacenter and their thermal characteristics as published by ASHRAE. A separate HVAC is provided for server room so as not to introduce contaminants from other areas.

Computer Fluid Dynamic (CFD) Modeling will be done, if required, to verify appropriate airflow and to ensure no hotspots develop within the server room. HVAC failover simulation tests ensure the HVAC air-handler positioning will stand up to HVAC unit failures without creating hotspots. Other mechanical services planning will include Leak Detection System, Plumbing system, Emergency Fixtures.

Fire protection

Fire protection system and extinguishers will comply with NFPA. Design will include methods for early detection and suppression of fire. High Sensitivity smoke detectors, with mechanisms to safeguard from false discharge of suppression system will be used. Suppression system will use Pre-action sprinklers.

Fire protection plan will take into account risks in following order.

- Safety of individuals or property affected by the operation
- Fire threat to the occupants in confined areas or the threat to exposed property
- Economic loss from business interruption due to downtime
- Loss from the value of the equipment
- Physical security

Physical Security

Security is given a careful consideration, and based on operation requirements, following mechanisms may be designed to enforce Physical Security of the Data Center.

- Single Entry and Exit for Normal Activities and restricted access to personnel
- Biometric with Pin/Proximity Access all the Doors.
- Entry Portal scans with metal detector
- Digital Surveillance Cameras with long Retention
- State-of-the-Art Security Monitoring Center, Perimeter Security, Individual Server Cabinet Locks
- Motion Sensors at Critical Equipment Location and secure rooms

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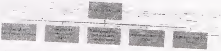
Building management system

Building management system shall be designed to monitor all mechanical, electrical, and other facility equipment and system. The system will be designed to be capable of local and remote monitoring and operation. Specifications for 24-hour monitoring of the Building Management System will be developed.



Project management

Key project management activities for non-IT infrastructure development would include:

- Development of project plan
- Appraise delivery schedules of lead equipment
- Ensure all components/items used are as per specifications
- Ensure all contactors follow safety norms
- Co-ordinate with UIDAI for any clearances from builder
- Ensure all installation activities are carried out as per consultant recommendation

Build out resource management

We will work with UIDAI to document and communicate detail requirements as a comprehensive package and send this message to the resource responsible for the construction of the facilities. We will:

- Work with Facilities architect and A&E firm to develop required facility design change requests and ensure communication through the management approval process
- Maintain a decision log that will provide a source of reference for all approved management decision pertaining to the construction of the associated Data Center.
- Construction As-Built: Work with construction project and A&E vendors to ensure that facility as-built, operational procedures and future plans are documented and effectively communicated to ongoing support teams.
- Change management: Identify change management process between construction project and DCTP. Ensure process is followed including acceptability of changes, reviews, documentation, approval and communication to all appropriate parties.

Facilities turn over management

We will collaboratively define and document:

- Commissioning and acceptance testing
- Punch-list items and management of delivery of resolution of punch-list items

Procurement challenges and our solution approach

A key success factor for the UID program is the self-sustainability of the CIDR. The procurement challenges related to the CIDR thus have two dimensions to it:

- Creating a self-sustaining model and
- The complexities associated with the technology to be deployed

It is evident that the peak load scenarios for CIDR will arrive between Year 2 and Year 5 post Go-Live of the system and it may not be possible to predict performance of the system in full measure in advance. This, in turn, will have a very important impact on the nature of public-private partnership ("PPP") model being offered to the Managed Service Provider.

Given these risks, the sourcing strategy to be adopted for CIDR should provide resolutions for following key decision items:

- Method of sourcing - Single stage versus two stage bidding
- Contracts - Single contract versus multiple
- MSP Contract structure
- Retention of strategic control over CIDR assets with UIDAI
- Total Cost of Ownership

Single Stage versus Two-Stage Bidding

As the envisaged solution involves complex technology being adopted at a scale hitherto not attempted anywhere, it is imperative that the method of sourcing the services for implementing the solution provides very high degree of confidence on the outcomes to justify the effort and upfront investments it shall entail.

There are two popular methods for ICT procurement as practiced across the world, namely - **Single Stage and Two Stage Bidding.**

- **Two Stage Bidding:** In the case of turnkey contracts or contracts for large complex facilities or works of a special nature or complex information and communication technology, a two-stage bidding procedure may be used, under which first unpriced technical proposals on the basis of a conceptual design or performance specifications are invited, subject to technical as well as commercial clarifications and adjustments and/or prototyping, to be followed by amended bidding documents and the submission of final technical proposals and priced bids in the second stage.

  We envisage the Prototyping or Proof of Concept (POC) to be a highly important exercise in arriving at the solution specifications that meet the CIDR requirements and also to help the participating bidders to gain complete understanding of the complexity and scale.

- **Single Stage Bidding:** In this method, bidders are expected submit final technical proposals and priced bids based on the information provided in bid document.

The apparent advantage of the two-stage bidding is that it allows for enhancement of the solution specifications by seeking inputs from multiple players and also allows proof-testing it on performance and reliability. However, it may result in longer procurement cycles and facing the risk of some bidders losing interest during the course of such a bid process. Following table presents the advantages and disadvantages of both methods.

Factor	Single Stage Bidding	Two Stage Bidding
Capability available in the market	There are not many cases of such large scale and complex implementation in India and across the world.	Two Stage bidding may be able to provide the 'learning curve' and allow usage of collective knowledge towards solution specifications
Specifications for the hardware infrastructure	In case of sizing of IT infrastructure, information inputs for volumetric analysis could be provided based on historical data with reasonable assumptions for forecasting hence reducing the degree of unknown and complexity in the stated procurement.	UIDAI may be able to assess the hardware specifications better after the prototyping stage

We understand that UIDAI is already undertaking a Proof of Concept exercise on the solution (or some of the solution components). The outcome of the proof of concept exercise could be an important input for the procurement strategy.

Solution and Vendor Evaluation

Irrespective of the method of sourcing adopted, UIDAI may have to adopt solution demonstration and benchmarking exercise as part of the bid evaluation to verify the solution specifications and Bill of Materials as provided in the bids meet the requirements stated in the MSP RFP.

- Demonstration of key functionalities is De-duplication, confidence of match across demographic and biometric data could be made by bidders based on pre-designed "solution demonstration scenarios" scripts that Ernst & Young can develop on behalf of UIDAI.
- For ICT hardware performance requirements testing, a benchmarking exercise in a controlled/laboratory environment could be made for the hardware proposed by the bidders. UIDAI may choose to setup the laboratory on its own or instruct the bidder to undertaking benchmarking exercises in their own/hired/OEM's labs under observation of a UIDAI appointed third party agency.

For the purpose of commercial evaluation of the bid, in case of Revenue Sharing model, UIDAI has options in the form of scoring based on value of viability gap funding; scoring based on transaction charges proposed by bidder, etc.

Single Contract versus Multiple Contracts

We understand from the Terms of Reference provided that, UIDAI may undertake 3 separate contracts with MSP, Data Center Service Provider and service providers for interim co-location facilities respectively. Following are some of the factors that need to be considered for decidmg on forming the contracts separately or as combined.

Factor	Single Contract	Multiple Contracts
Single Point of Contact & Accountability	Single contract can help assign the responsibility on one contractor for all the goods and services and they meeting the required performance requirements. The contractor may internally manage the dependencies on the delivery with sub-contractors and OEM without transferring the liability onto UIDAI.	Multiple contracts require clear definition of the responsibilities among the contractors for infrastructure and services where there are overlapping responsibilities and dependencies and vendors will have to be cooperative. E.g. If the availability of the software system to end users is dependent on the availability of the Data Center which may be managed by another contractor.
Degree of dependency on single contractor	Given the schedule duration of implementation, the variety and volume of procurement, relying on a single contractor for all packages (at least 1 to 3) could expose UIDAI to significant risk of delay and discontinuity should there arise issues and conflicts with the contractor	The risk of delay and discontinuity is confined to individual contract with little or no impact on other procurements
Interdependencies	In case of transition from co-location facilities to dedicated data center, single contract shall avoid the need of efficient hand shaking between two contractors	Such a transition shall require high level dependency between contractors and increase the risk of successful transition

MSP Contract - Contract structure

Contract structure shall be based on the type of business model adopted for engaging the MSP – Revenue Sharing, Fixed Payment or any other. Also the structure of the PPP model, whether BOT, BOO or BOOT will also have an impact. Following are some of the elements of the contract that shall be dependent on the model.

Duration

In case of fixed payment model, the parameters that shall drive the decision on the duration shall include expected post implementation period that the solution may require to run in stable manner based on the load requirements each year. For contract based on revenue sharing (with little or no payments by UIDAI towards setup cost), the duration shall also consider the minimum expected period for recovering of the costs from the portion of revenue that UIDAI agrees to share with MSP every year.

Payments

Many contracts adopt payment terms as a mechanism to control performance. However in case of the proposed contract with MSP, given the nature of work and role of MSP is the success of this project, we propose a partnership based approach that allows compensating MSP for the high capital and operational expenditure in a timely manner while ensuring the payment is results or milestone based.

In case of Revenue Sharing model, as assessment of estimated revenue visa-a-vis the cost incurred must be made to check for any viability gap during the contract period and evaluate options for compensating for the viability gap, for example, in form of payment of a portion of the setup costs if the contract period.

Total Cost of Ownership

Given the trends of decreasing cost of computer power, memory and other hardware infrastructure and also the increase scale of adoption of specialized technology like biometrics, UIDAI can utilize the opportunity for savings in the contract value during the course of the contract. As the contract value is decided at the commencement of the project and the actual sourcing of hardware infrastructure shall happen at least a year later, UIDAI can exercise the option of seeking revised quote for proposed hardware based on the prevailing market price at the time of revision and the savings thus identified could be taken as a deduction in contract value or as an alternative, UIDAI can request for latest versions of the proposed technology at additional cost that covers the savings thus identified.

Retaining strategic control over CIDR assets in an outsourced model

As UIDAI envisions adoption of outsourcing at a significant scale, following are the areas where we need to assess the degree of control that UIDAI would like to retain:

- Brand
- Data
- Infrastructure
- Operations

While we understand that the strategic decision related to these shall be under fully owned by UIDAI, there are other aspects of control that shall have impact on the same.

Brand

We refer to brand in context of this project as all the associations the external stakeholders shall have about UIDAI's image, quality of service, values, etc and some of such associations that UIDAI would like to stand for are "reliability", "transparency", "responsive" and "welfare focused".

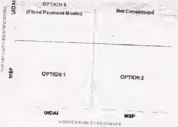
The implications that the model of outsourcing adopted and the areas covered have on the brand of need to be carefully assessed by UIDAI for the success of the initiative in terms of gaining a wide acceptance among its stakeholders. For example, we discuss below the potential impact on outsourcing models on the brand.

Implications on Brand in Revenue Sharing Model

In revenue sharing model (where MSP receives a portion of revenues earned from UID services), the MSP may proactively take steps to manage and augment the performance levels of the systems and service delivery infrastructure to manage the demand. While it shall help improve the efficiency and responsiveness of CIDR, unlike the case of fixed payment model, the MSP may simultaneously try to generate more revenues by identifying new opportunities to increase the demand for UID services and hence would like to play a large role in promotion or marketing of these services to new and existing customers.

Revenue Sharing Model	Fixed Payment Model
Onus on MSP to maintain and improve service levels	Onus on UIDAI to monitor and ensure consistent performance
MSP may proactively augment infrastructure to reach out to more customer	UIDAI may to have assess the adequacy of infrastructure periodically
MSP may identify opportunities to enhance revenues	UIDAI may to identify revenue opportunities on its own
MSP would like to play a role in marketing of the UID services thus may influence the UIDAI brand	MSP shall have no direct role in marketing and promotions

Hence in a revenue sharing model, UIDAI may to decide on the role of MSP in marketing exercises to up-sell/cross-sell to existing and acquire new customers. Following are the possible options:



- Option 1: MSP identifies revenue enhancement opportunities, UIDAI to convert them into revenues
- Option 2: MSP identifies revenue enhancement opportunities, MSP (& UIDAI) to convert them into revenues
- Option 3: UIDAI identifies revenue improvement opportunities, UIDAI to convert them into revenues

As Option 3 is more likely to be adopted in Fixed Payment model, we shall keep it out of the discussion presently.

Among the other two options, Option 1 offers UIDAI more control on marketing efforts for UID services and hence enables greater control on its brand manifestations that includes promoting services well within the legal framework without compromising the quality of service. However, MSP may allege lack of action from UIDAI for not realizing the revenues from the opportunity identified.

In case of option 3, onus of brand management falls on MSP as well and as it may resort aggressive approach to improve revenues, service definition and quality may have an impact requiring additional monitoring mechanism and effort from UIDAI.

Data

It is the most vital asset that UIDAI has to maintain complete strategic control on given the sensitivity of the information it contains. In an outsourced model, the external service providers (vendor) should not be allowed to view of the data and extreme care must be taken while allowing the service providers to undertake data capture, maintenance and information dissemination services. Following are some of the measures that help in protection of data in such an environment

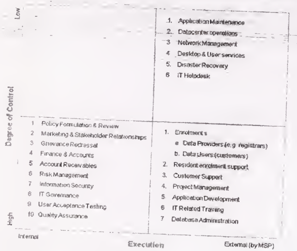
i. Encryption of the data in the CIDR database with private key of authorized UIDAI personnel
ii. Access privileges of the end user to search, view and maintain the data shall be managed by an authorized UIDAI personnel instead of vendors
iii. Data administrators shall not have privileges to view the data (restriction on execution of SQL like SELECT)
iv. Maintain of a user log of all database queries

Infrastructure

Given the national importance of the proposed initiative, it is suggested that all physical assets - IT and Non-IT infrastructure should be owned and controlled by UIDAI. As we expect the requirements of large facilities for Data Centre and Disaster Recovery sites, the same could be owned by UIDAI in long term. The management of the infrastructure could be outsourced in varying degree (as discussed under heading 'Operations'). However, all asset management activities shall be monitored by the UIDAI personnel.

Operations

We assume that UIDAI shall augment its capacities of managing such complex operations and infrastructure by relying on external service providers. However, UIDAI shall be responsible and accountable for the same and hence a certain degree of control vests in UIDAI always and for all operations. The illustration below indicates the level of control vis-à-vis the mode of execution that UIDAI may like to adopt for various activities.



Intellectual property and transfer of technology

One of the important aspects of purchasing specialized ICT infrastructure is related to ***ownership and rights of usage*** of its underlying intellectual property. As the envisaged solution for CIDR may be a mix of custom and standard software, it is important that UIDAI understand the implications of IPR on each type and adopt appropriate safeguards in the contract with the technology service providers and OEM suppliers. Our experience in undertaking large scale international ICT procurements for international financial institutions like World Bank helps us provide insights and leading practices on building the required safeguards in the contract.

Procurement decisions related to Intellectual Property Rights

The procurement decisions related to IPR shall involve copyright and usage related rights on:

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1. Architecture and Technology practices, procedures and algorithms
2. Standard Software
3. Custom Software - includes 'business logic'- Business rules, procedures and algorithms from a business user perspective that is specifically developed for UIDAI)

As the solution like CIDR may require developing new architecture practices and models and specific technology requirements and given the sensitivity of the project, it is important that UIDAI retain the copyright ownership of the same and clearly define the 'rights of usage' by the Managed Service provider/system integrator such that any misuse of sensitive elements could be avoided. The same is also applicable for custom software systems/components that will be developed in the proposed project.

Retention of ownership helps UIDAI exercise rights on using the same for other purposes and even assigning, licensing, or otherwise transferring voluntarily to other government agencies in future. However, there is a broad spectrum of strategies that UIDAI can adopt regarding Intellectual Property Rights in custom software and it is important to identify the Custom software (and custom materials and proprietary practices, procedures) elements and assess their importance individually before deciding on the nature and degree of IP rights that UIDAI should enforce.

On standard software, whose ownership is vested with a supplier, the license agreements should be offer adequate provisions to UIDAI in its usage as per its requirements. Restrictions (see Box - "Examples of restrictions of Standard software licenses") should be carefully assessed and provisions should be provided where required to either relax or remove any of such restrictions.

Examples of restrictions that exist in standard software licenses

a. Restrictions on the number of records in particular categories that may be held by the system
b. Restrictions on the numbers of transactions in particular categories that may be processed by the System in any day, week, month, or other specified period
c. Restrictions on the number of persons who may be authorized to use the system at any time
d. Restrictions on the number of persons who may access the System simultaneously at any time
e. Restrictions on the number of workstations that may be connected to the System at any time

Technology Transfer

As UIDAI may consider adopting commercial off-the-shelf software for key functions like de-duplication, Name and Address Match, it is important that adequate precautions are taken to ascertain the support and possibility of upgrades or customizations in future even if the supplier is unable to continue offering the support. *Escrow arrangements* in contract for the supply of software help address the concern.

Provisions in such arrangements generally cover:

i. The Supplier's obligations to deliver the Source Code to the escrow agent and make replacement deposits to ensure that the Source Code is up to date;
ii. The Supplier's warranties that the Source Code is at all times capable of being used to generate the latest version of the executable code to the relevant Software in use by the Purchaser and suitable to enable the Purchaser to support and develop the Software;
iii. The escrow agent's obligations to keep the Source Code secure and confidential;
iv. The escrow agent's obligations in relation to verification of the Source Code (to ensure that it is Source Code and that it is capable of generating the executable code);

v. The obligations of the Supplier and the Purchaser in relation to payment of the escrow agent's fee;
vi. The escrow agent's right and obligation to release the Source Code to the Purchaser in certain specified "release events" (e.g., bankruptcy or insolvency of the Supplier or the Supplier's failure to make deposits or to support the Software);
vii. Limitations and exclusions of the escrow agent's liability;
viii. The circumstances in which the escrow arrangement will terminate, and what will happen to the deposited Source Code on termination; and
ix. Confidentiality undertakings to be given by the Purchaser on release of the Source Code.

The protection provided by an escrow arrangement, however, should be weighed against the costs of administering it.

In case of custom software, the source code and executables shall be owned by UIDAI. On the hardware and system software, UIDAI should guarantee continued support from the OEM suppliers should its contract with Managed Service Provider cease to exist at any point of time.

We would like to conclude by stating that EY's experience in assisting leading International Financing Institutions ("IFI") and its association with complex procurement activities such as those for an important intelligence agency of the Government of India and one of India's largest tax administrations has allowed us to understand a wide variety of issues involved in complex technology procurement. We will be able to deliver this expertise to the UIDAI for a successful implementation of the CIDR.

Case study- Identity and Passport Service, United Kingdom

Executive Summary

Identity assurance is an increasingly pressing concern for everyone in the UK. More than ever before, people need to be able to prove who they are and to be sure that others are who they claim to be.

To address this need, the UK government has launched the National Identity Scheme (NIS), which will establish a much more secure system of personal identification than is in place today. The NIS is one of the most complex, far-reaching and politically sensitive technology-enabled transformation programs ever undertaken in UK Government. The Identity and Passport Service (IPS), created as an Executive Agency within the Home Office in April 2006, will implement and run the Scheme. The first identity cards were issued in November 2008.

At the outset, IPS needed to establish a group of suppliers who would partner with the government to deliver this complex ten year transformation program. Having decided to create a strategic supplier group consisting of a shortlist of approved providers, it needed a consulting partner with deep experience of technology delivery and government procurement, plus a proven track record of commercial innovation. **It chose Ernst & Young.**

The multi-disciplinary Ernst & Young team started work in June 2007. Within a year, applying an innovative Competitive Dialogue procurement approach, the team delivered a unique and world-class Framework agreement that can be used to procure any identity-related service in government.

The **NIS Framework agreement was signed with five Systems Integrators** in June 2008 and was immediately followed by the launch of two major program procurements to contract with suppliers to deliver elements of the NIS.

Once again, IPS selected Ernst & Young to support them as client side advisors for the planning, management and delivery of these two procurements, which had a combined value of £650 million over 10 years. Both contracts were awarded on time in May 2009:

- The Application and Enrolment (A&E) procurement selected a supplier to replace existing contracts for processing passport and identity card applications in the UK

- The National Biometric Information Service (NBIS) procurement appointed a supplier to deliver the biometric store for the National Identity Register, including fingerprints, digital signatures and facial images. This included a biometric storage capability to replace the UK Borders Agency existing technology platform that supports biometric visas for Foreign Nationals.

The Ernst & Young team's blend of professional project management, technology, stakeholder management, public sector procurement and commercial negotiation skills were central to the project's success.

Approach to Delivering the Procurements

At the outset, Ernst & Young mobilized an experienced team to deliver the procurement on behalf of IPS. The team drew on Ernst & Young's wealth of public and private sector experience, with seasoned professionals in public sector, procurement, program management, financial modeling and commercial negotiation. The Ernst and Young team collaborated with the Civil Service team in shaping, managing and delivering the procurements.

Framework Procurement: Strategy & Planning

In the early stages, the team worked closely with the IPS Executive Commercial Director and the Office of Government Commerce (OGC) to set the commercial strategy for the NIS. The team developed the Prospectus, issued to the market in August 2007.

Framework Procurement: Pre Qualification Questionnaire Stage

The launch of the procurement attracted over 200 expressions of interest, confirming the appetite in the supplier marketplace. Over a six-week period, the team led the evaluation that resulted in eight Systems Integrators progressing to the Dialogue Stage.

Framework Procurement: Competitive Dialogue Stage

An established government precedent for reaching contractual agreement on a complex programme such as the NIS was an extended period of negotiation. In contrast, the innovative approach developed by the team enabled a contract to be delivered in under six months. During this period, over 100 detailed dialogue sessions were held with each supplier. Senior Government Officials invested significant time with the suppliers to build long-term sustainable relationships, demonstrating commitment at the highest level. Alongside managing the overall dialogue, experienced commercial and financial negotiators from Ernst & Young led the supplier-facing commercial dialogue, resulting in a common Framework contract being agreed by all potential suppliers in mid-March.

Framework Procurement: Contract Award Stage

Following evaluation, the EY team worked with cross-government stakeholders to manage the approvals to award the NIS Framework contract to five Systems Integrators in June 2008.

Program Procurement: Competitive Dialogue Stage

Following the award of the Framework, the EY team worked within two major programmes to shape, manage and deliver the A&E and NBIS procurements. This included project management, development of commercial/financial terms and trade-off positions, commercial dialogue/negotiation with bidders, financial/bid modeling support, requirements development and evaluation and down selection execution.

Program Procurement: Contract Award Stage

Following final evaluation, the EY team worked with cross-government stakeholders to manage the approvals to award the A&E and NBIS contracts in May 2009.

Challenges to Successful Delivery

The outcome is widely regarded as best in class procurement in UK Government – building on previous lessons learned from across government and received commendation from the Office of Government Commerce. The three main challenges faced by the team were;

- **Delivering such a complex procurement in a tight timescale that had never been achieved before:** The Framework needed to be sufficiently flexible to support a wide range of future services, from Secure

Technical Architecture deployment through the Business Process Outsourcing. It also needed to be flexible to be used as a means of procuring a wider range of Identity related services across government

- Developing a contract that was innovative in that it incentivized suppliers and yet protected the public purse: A range of mechanisms to deliver value for money to the Home Office sit at the heart of the contracts

- Developing strong trust-based relationships with future suppliers that build upon IPS values: The contracts are built around the principle of partnering, transparency and collaborative working. An innovative and contractual Partnering agreement, built around behaviors, was developed jointly with suppliers

Client feedback

> **Meg Hillier MP (Parliamentary Under-Secretary for Identity):**
>
> *"Hand on heart I can say that one of the best procurement teams in the Government is dealing with the scheme. We went through a very effective procurement strategy. We set up a competition, and five companies ended up on our team of contractors which will bid for smaller contracts. That strategic suppliers' group went through such rigorous testing that we now know the standards that we expect from it, and it does, too. There is much more collaboration among the team now, and its members are competing heatedly for various contracts that are now being sub-let."*
> (Westminster Hall Debate, 11 March 2009)

Creating a self-sustaining revenue model for CIDR

At present, the CIDR is proposed to be managed by a Managed Service Provider ("MSP") on a build, own, operate model. Setting up and ongoing operations of the CIDR will entail significant costs.

It is, therefore, essential to create a self-sustaining revenue model around the value proposition being offered by the CIDR services to both Governmental as well as other agencies. At a minimum, the revenue model should offset the costs incurred for setting up and managing the CIDR. A worst case scenario would be if there is a viability gap and therefore, funding support is required from the Government of India for the CIDR.

In the following we have captured some of our initial thoughts on the revenue model that can be created for the CIDR. We could enhance this during the course of the assignment.

Potential services which CIDR could offer

Conceptually, based on the 'mandatory'[12] information proposed to be captured by the UIDAI, the following basic services could be offered:

- Identity verification
- Address verification
- Verification of date of birth
- Verification of gender (Male/Female/Transgender)

For each of these services, it is possible for us to identify three key attributes customers may want:

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[12] As per UID DOSVP Committee Report, V.1.0

1. High level of assurance
2. Speed of response
3. Round the clock availability

1. Identity verification: As a service, this is of interest not only to agencies in India but also overseas. Such verification is often required to deliver a large portfolio of services and often a high degree of reliability is required. It is in this context that biometric verification gains significance and the role of Registrars in the UID ecosystem is crucial.
    - Degree of assurance: High if biometrics is used. Else, low if only UID is used.
    - Value for customer
        - i. High, if a high degree of assurance can be provided as in the case of biometric verification.
        - ii. Low, in the case of text based verification.
2. Address verification: Though this is a desirable service, there is a large population in India which is constantly on the move. Given this, it may be difficult to assign a high degree of assurance to a text based address verification system. The proportionate value of this service may hence be less for purposes where an up-to-date address of the resident is required.
    - Degree of assurance: Medium
    - Value for customer
        - i. Low, in cases where up-to-date address may be required.
        - ii. Medium, in cases where a limited degree of assurance is acceptable.
3. Verification of date of birth: This is a service which is in great demand especially for employers and for educational institutions. For a variety of Government services as well this field is of importance. This can be searched with only the UID number. Biometrics may not be a necessary input for CIDR to respond with a reasonable degree of assurance. With passage of time as the CIDR gets tightly integrated with Birth/Death registration processes, the accuracy of this data in CIDR will improve.
    - Degree of assurance: High, where the Date of Birth is verified. Low, where it is declared or approximate.
    - Value for customer: High, where date of birth verification is of importance for service delivery.
4. Verification of gender: One of the key objectives of the UID initiative is to be inclusive. In this context, there may be limited requirements where reliable verification of a person's gender may be of importance. In the proposed scheme of data to be captured by CIDR, this may have limited value to customer.
    - Degree of assurance: Low
    - Value for customer: To be assessed on a case-to-case basis

Summary of assessment

The key logic, therefore, driving development of the revenue model would be:

- Who would like to verify?
- What would be the purpose of verification?
- How critical is the verification for the user?

These parameters would determine how much the user would be willing to pay. Going by the above assessment, maximum value for customers may lie in biometrics based identity verification followed by various other offerings. Biometrics based identity verification could be the strongest type of verification and least amenable to frauds. This type of verification is likely to be used most often if the service is available at a reasonable price.

- The CIDR services have a significant social welfare dimension. The revenue model should be cognizant of this dimension.
- The key to the success of the UID project would be to make biometric matching easily accessible and available at a reasonable price by the CIDR. Once this is done, the applications would be myriad.

Following would be two additional considerations for identification of revenue streams.

- Who are the likely customers for CIDR? Why will they use these services?

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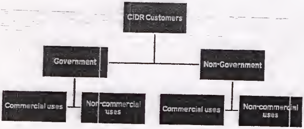
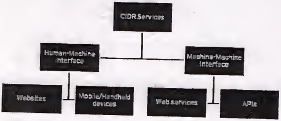
  - The customer universe for CIDR's verification services could be classified as Government and Non-Government users.
  - The purpose of usage could be classified as Commercial or Non-commercial uses.



- How will the services be offered?
  - In all likelihood, CIDR services may be hosted as a key component of the National as well as State Service Delivery Gateways. Thus it will play a key role in delivery of all Government services going forward. [G2G, G2C, G2B and G2E]
  - Services could be offered through a Human-Machine Interface (e.g.: Website, Interactive Voice Response, SMS) or a Machine-Machine Interface (e.g., Web Services).



Guiding principles for identification of revenue streams

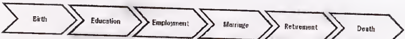
In our view, following should be key guiding principles for identification of revenue streams for CIDR.

- The revenue model should strike a ***balance between the objectives of social inclusion/welfare versus commercial sustainability of the CIDR.***
- Uptake of CIDR services will have significant impact on sustainability of the UID initiative. Hence *target customers who will provide assured sources of revenue.*
- To catalyze uptake, *target those customer segments which are at a high level of maturity to use CIDR services.* Ideally, such customers should:
  - Use IT systems extensively and which can be quickly interfaced with the CIDR for software-initiated verification requests.
  - Have large service delivery networks with connectivity in place
  - Have a centralized management which UIDAI can engage with easily
  - Provide services for which a service charge is paid and where customers may not object an incremental payout or having the verification cost added to the service charge.
- The business model should help keep the total cost of service delivery low or should provide economies of scale.
- Minimize or avoid free services to the extent possible.
- The revenue source should be amenable to existing or proposed legal framework related to citizen's privacy.

- Many users of CIDR services may also perform the function of data providers to the CIDR. They would incur a certain cost to adhere to KYR guidelines and maintain the KYR infrastructure. Hence the revenue model may need to address their specific concerns.

Broadly, once an understanding of the above questions is developed, the following detailed analysis can be carried out.

Approach to identification of revenue streams

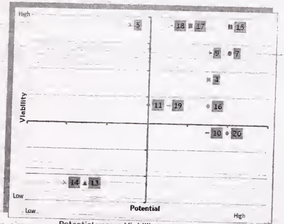


The need for identity verification arises at different stages of a person's life. In identification of revenue streams, the starting point would be to plot those lifecycle events where the verification services are of vital importance.

Using this approach one may then segment services availed and position CIDR services accordingly. Following is an illustrative approach based on the guidelines earlier.
We could assess any list of potential uses of CIDR services on the following two criteria.

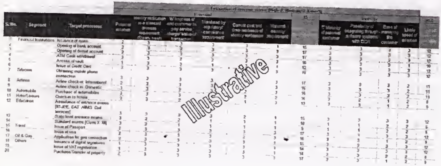
- Revenue potential for CIDR services: This could be assessed on the basis of the following sub-criteria:
  - Potential volumes of usage
  - Identity verification is a standard process requirement and therefore, there will be a steady need for CIDR services
  - Willingness of end customer to pay service charge measured on the basis of overall value of transaction
  - Identity verification is mandated by regulatory/ compliance requirement
  - Current cost and time overheads of identity verification
  - Is a requirement due to national security considerations
- Viability of tapping the revenue potential. This could be assessed on the basis of:
  - IT Maturity of potential customer: Agencies which have extensive computerization will be able to adopt the online verification services of CIDR faster than those with limited computerization. They will also offer a high possibility of integrating through software systems with CIDR.
  - Ease of managing the customer: It would be preferable to engage customers who have a centralized management and who also provide a large volume of transactions. This will reduce the overall cost of acquiring and servicing the customer.
  - Likely speed of adoption and therefore, how soon revenues will accrue to CIDR

Based on these criteria, we present below as an illustration our assessment of a portfolio of 20 services for which CIDR based identity verification could be valuable. Note: The following output is intended as an illustration of our approach and not an opinion about the likely potential or viability of any service.



Potential versus Viability assessment of target processes where CIDR verification could be used

An illustrative scoring template used to arrive at the above assessment is shown below.



			Potential							Viability				
S.No.	Segment	Target processes	Potential volumes	Identity verification as a standard process requirement (Steady need)	Willingness of end customer to pay service charge/ Value of transaction	Mandated by regulatory/ compliance requirement	Current cost and time overheads of identity verification	Minimal security requirement	[illegible]	Maturity of potential customer	Possibility of integrating through software systems with CIDR	Ease of managing the customer	Likely speed of adoption	[illegible]
1	Financial Institutions	Issuance of loans	2	3	3	3	3	1	15	3	3	3	3	12
2		Opening of bank account	2	3	2	3	3	3	17	3	3	3	3	12
3		Opening of demat account	2	3	3	3	3	3	17	2	3	2	3	12
4		ATM Cash withdrawal	3	3	2	2	3	3	16	3	3	3	1	10
5		Access of vault	1	3	3	1	3	1	12	3	3	3	2	12
6		Issue of Credit Card	3	3	3	3	3	3	16	2	3	3	3	12
7	Telecom	Obtaining mobile phone connection	3	3	3	3	[illegible]	3	17	3	3	3	2	11
8	Airlines	Airline check-in: International	2	3	3	3	[illegible]	3	16	3	3	3	2	11
9		Airline check in: Domestic	3	3	2	3	2	3	16	3	3	3	2	11
10	Automobile	Purchase of automobiles	3	3	3	[illegible]	2	2	16	3	2	1	2	8
11	Hotel/Leisure	Check-in to hotels	2	3	2	[illegible]	1	3	13	3	3	1	2	9
12	Education	Attendance of entrance exams [IIT-JEE, CAT, AIIMS, Civil services]	3	3	3	3	2	1	15	3	3	3	3	12
13		State level entrance exams	3	2	2	1	1	1	10	1	1	2	2	5
14		Standard exams [Class X, XII]	3	2	1	1	1	1	5	1	1	2	2	5
15	Travel	Issue of Passport	2	3	3	3	3	2	17	3	1	3	3	12
16		Issue of visa	2	3	3	3	2	3	16	3	3	1	2	9
17	Oil & Gas	Application for gas connection	2	3	3	3	3	2	15	3	3	3	3	12
18	Others	Issuance of digital signatures	1	3	3	3	3	1	14	3	3	3	3	12
19		Issue of VAT registration	1	3	3	3	3	1	14	2	3	2	2	8
20		Purchase/Transfer of property	2	3	3	3	3	3	17	2	3	1	2	9

Illustrative

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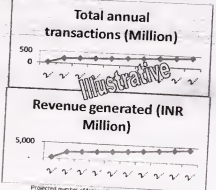
Estimation of likely demand for services

Based on the above analysis, one could make assumptions from industry studies and secondary research data on projected growth of transactions identified where CIDR services could be used. Key considerations in projecting revenues would be:

- Ideal case volume of commercial transactions which can be catered to by CIDR
- The portion of such transactions where CIDR services are adopted
- Portion of the volumes that are really catered to by the CIDR
    a. This is constrained by the need to scale up CIDR infrastructure and its capacity
    b. The speed at which data can be on-boarded into the CIDR to increase its adoption
- Initially CIDR would address those services which would lead to on-boarding of resident data. There may be no revenue generation from the initial phases.

In brief, the value of CIDR will increase proportionately with the rate at which data enters the system. This indirectly translates to the number of UID that get assigned.

The following charts illustrate a sample analysis.[13] [14]



Projected number of transactions and revenues for the 10 high potential high viability services identified

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[13] We have made certain assumptions in these charts which may be based on highly simplified models These results are for illustrative purposes of this proposal only We have considered the fact that initially the services may be hosted out of a co-located facility and then migrated to a larger CIDR facility Secondly, growth of services will be propelled with input of more data into the CIDR which in turn would require the enrollment processes to be rolled out and processed within the CIDR

[14] EY's scope of work as part of this engagement as stated in the RFP shall be limited to creation of Strategy, Business Models, Business Cases, and Potential Revenue Streams for CIDR Estimation of demand, determination of pricing and estimation of revenues and costs associated with delivery of CIDR services is outside the scope of this engagement

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Developing business cases for CIDR

Beyond the immediate business drivers the CIDR also has to cater to the larger social objectives it is intended for. Hence the business cases for CIDR would emerge not only from the anticipated Economic Return on Investment ("E-ROI") but also the Social Return on Investment ("S-ROI").

Economic Return on Investment of the CIDR

The range of identity-based services and other value added services that can be offered by CIDR together with the various means of monetizing these services would provide the basis for revenue estimation. Once the services and means of monetizing them have been identified, prioritization of the services could be done based on parameters such as revenue generation potential, ease of adoption and expected rollout date.

The assumptions and estimates made in each of these decisions would require validation with all stakeholders including UIDAI, potential customers, technology vendors, MSP, central and state government agencies and regulatory bodies such as RBI, SEBI and TRAI among others. The exhibit below illustrates the revenue estimation model that may be used for a service offered by CIDR.

Service	Address verification									
Monitizing options	Per transaction with optional monthly or yearly subscription model for M-M after full rollout									
Pricing model	0% to 5% avg margin for govt; at 20% avg. margin for non govt, margin to to vary with time									
Rollout plan	H-M for govt by year 2, H-M for non govt and M-M for govt in year 3; full rollout starting year 4									
	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
Customer segment - Government										
Interface mode : Human - Machine										
Demand (Mn)	-	0.55	0.61	2.00	2.20	3.00	3.30	4.00	4.40	4.84
Price (INR)	-	5.00	5.50	2.00	2.20	3.00	3.30	4.00	4.40	4.84
Revenue (INR Mn)	-	2.75	3.33	[illegible]	84	9.00	10.89	18.00	19.36	23.43
Interface mode : Machine - Machine										
Demand (Mn)	-	[illegible]	[illegible]	0.22	2.00	2.20	3.00	3.30	4.00	4.40
Price (INR)	-	[illegible]	2.00	2.20	2.00	2.20	3.00	3.30	4.00	4.40
Revenue (INR Mn)	-	.	0.40	0.48	4.00	4.84	9.00	10.89	16.00	19.36
Total revenue from government (INR Mn)	-	2.75	3.73	4.48	8.84	13.84	19.89	26.89	35.36	42.79
Customer segment - Non government										
Interface mode : Human - Machine										
Demand (Mn)	-		0.10	0.11	2.00	2.20	3.00	3.30	4.00	4.40
Price (INR)	-	-	15.00	16.50	2.00	2.20	3.00	3.30	4.00	4.40
Revenue (INR Mn)	-	-	1.50	1.82	4.00	4.84	9.00	10.89	16.00	19.36
Interface mode : Machine - Machine										
Demand (Mn)	-	-	-	0.80	0.88	2.00	2.20	3.00	3.30	4.00
Price (INR)	-	-	-	5.00	5.50	2.00	2.20	3.00	3.30	4.00
Revenue (INR Mn)	-	-	-	4.00	4.84	4.00	4.84	9.00	10.89	16.00
Total revenue from non-government (INR Mn)		-	1.50	5.82	8.84	8.84	13.84	19.89	26.89	35.36
Total revenue from service (INR Mn)		2.75	5.23	10.30	17.68	22.68	33.73	46.78	62.25	78.15

Illustrative

Estimation of costs incurred in operating the CIDR would require identification of each category of costs, understanding the key drivers for each cost head and validation of the assumptions that each cost driver is based upon.

To understand the key risks of the business model, sensitivity analysis of the business plan needs to be done. Changes in estimated revenue and cost drivers and their impact on the breakeven period and viability of the project need to be verified. Optimistic and pessimistic scenarios may then be built based on the sensitivity analysis.

Illustrative

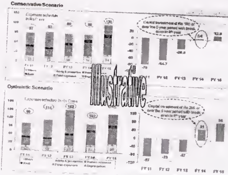
Sensitivity Analysis Assumptions	Conservative Scenario				
	Year 1	Year 3	Year 5	Year 7	Year 10
Total Demand	159	191	229	273	324
Adoption %	0 5%	2 0%	3 0%	3 5%	4 0%
Revenue (INR Mn)	859	3,91	6,98	9,51	13,17
IT assets (INR Mn)	151	[illegible]	318	461	582
Branches	1	1	2	3	4
Employee strength	15	35	52	76	92

Sensitivity Analysis Assumptions	Optimistic Scenario				
	Year 1	Year 3	Year 5	Year 7	Year 10
Total Demand	259	591	729	973	1324
Adoption %	1 5%	3.0%	5.0%	7%	10%
Revenue (INR Mn)	1256	8,916	12,986	17,812	26,174
IT assets (INR Mn)	181	261	388	561	782
Branches	1	2	3	4	5
Employee strength	15	55	72	98	152

Risk mitigation plans for the key risks identified during the sensitivity and scenario analysis would then be developed. This may have an implication on the nature of Public Private Partnership proposed as part of the procurement stream. These may include

- Revisiting operating models and phasing assets acquisition to complement growth or
- Planning for viability gap funds that may be tapped into under certain situations

The exhibit depicts some of the parameters that a sensitivity and scenario analysis for CIDR may cover.



Revenues from Green IT solutions

The operation of CIDR data centers will be highly energy intensive. Through usage of **Dynamic Capacity Management solutions and Data Centre Energy Management solutions** it will be possible to reduce CO2 emissions and gain carbon credits. These could be used as a revenue stream for funding of CIDR operations through trading of carbon credits. Shown below is an illustrative calculation of how this can be achieved.

How Green IT solutions can help sustain the CIDR

Power Capacity in Kilo Watts	10,000.0
Yearly Power Consumption in Kilo Watt Hours	216,000.0
CO2 emissions per Kilowatt Hour in kgs	0.6
Total CO2 emissions per year for the power consumed	[illegible]
CO2 emissions per year in tons	[illegible]
Savings due to energy management	0.4
CO2 Savings due to energy management in tons	501.1
Carbon Credits per Year in Euros assuming 12 Euro per ton of CO2	6,013.4
Earnings per year in Rupees due to carbon credits	**414,927.4**

Illustrative

Social Return on Investment (S-ROI) of the CIDR

In identifying revenue streams for the CIDR and establishing their revenue streams, UIDAI may need to take a view beyond the immediate economic returns. The latter view may be required from the perspective of making the CIDR economically viable and therefore, an attractive option for the Managed Service Provider. From UIDAI's perspective, an approach to be adopted vis-à-vis could also be driven by the social impact the solution has. One approach that could be adopted to measure this return is the concept of **Social Return on Investment**.

SROI Methodology	Application to CIDR services
Establishing scope and identifying key stakeholders	Scope: Both direct and indirect benefits from service Stakeholders: Customers, vendors, MSP, partner agencies, regulatory bodies, governments etc
Mapping outcomes	Through discussion with each stakeholder an impact map will be generated which shows the relationship between inputs and outcomes
Evidencing outcomes and giving them a value	Each outcome whether it be reduced leakage of funds or improved reach of government services or reduction in inequality will be estimated and valued using data
Establishing impact	Having collected evidence on outcomes and monetized them, those aspects of change that would have happened anyway or are a result of other factors are eliminated from consideration
Calculating the SROI	This stage involves adding up all the benefits, subtracting any negatives and comparing the result to the investment.
Reporting, using and embedding	The results of the SROI analysis are shared with stakeholders and the analysis is verified ad validated by them

While it may be difficult to establish S-ROI during the course of the present engagement as information on outcomes may not be available, EY could in consultation with UIDAI consider including some inputs on the methodology to establish the business case for certain revenue streams.

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We have provided below a brief illustration of how the S-ROI concept could be used in the context of the CIDR. To do so, we have taken a broader view of how the CIDR will unfold and followed it with the benefits that may flow from it.

Impact of ongoing e-Governance and social inclusiveness initiatives

An important requirement for the CIDR would be integration with ongoing e-Governance initiatives. Three key integration requirements which can have a significant impact on the revenue potential of CIDR would be:

a. **Integration with National and State Service Delivery Gateways ("NSDG" and "SSDG")** will help integrate CIDR's verification services with a large portfolio of e-Governance services and social sector initiatives. This will thus drive demand for services. It is, however, to be noted that many of these services involve micro-payments. This brings about the business case for integration with the National Payment Gateway as well.

b. **Integration with the National e-Payment Gateway:** Collection of payments, especially micro-payments made as part of G2C service delivery can be a significant overhead for the CIDR's ongoing operations. Therefore, it is essential that the CIDR is integrated with the National e-Payment Gateway

c. **Integration with m-Governance initiatives** of various state governments. We anticipate that mobile based services would help drive usage of CIDR further.

We present below an illustrations in this context based on our initial assumptions. Many of these are drawn from the EY team's experience in the e-Panchayati Raj Mission Mode Project.

Micro-ATMs, banking correspondents and the CIDR's revenues

Under the existing Reserve Bank of India (RBI) norms, grocery and medical shop owners, agents of small savings schemes, petrol pump owners and retired teachers among others can perform the role of banking correspondents. They can enable access to banking services a large segment of rural population. Keeping in view that most of these transactions would be micro-payments, innovative models for collection of low transaction fee from banking correspondents could be looked at.

Illustrative S-ROI computations

Let us assume that the following could be some outcomes of implementation of the CIDR.

- The need to prove identity only once will bring down the transaction costs for the poor
- Clear Identity would transform the delivery of social welfare programs by making them more inclusive of communities now cut-off from such benefits due to lack of identification
- Potential elimination of fraud and duplicate identities
- Facilitate entry of for poor and underprivileged residents into the formal banking system & opportunity to avail services provided by Govt. & Private Sector
- Lower KYR costs for the registrars
- For Registrars, focused on Social Goals, UID would enable them to broaden reach
- Cost Savings for Exchequer

Based on our initial calculations based on enrollments projected in the UIDAI approach paper, the S-RDI for the CIDR can be estimated at approximately one thousand Rupees for every one Rupee spent on the CIDR.

Key business model decisions

Following are some of the other key business model decisions which may need to be taken. We present our preliminary analysis of each of the areas. These may be further explored during the assignment.

To Register or not register customers

Based on our present understanding, the need for registration of 'human' customers may not arise. It may also have limited feasibility due to the following reasons:

a The CIDR will only host a verification service. Therefore, a need to keep track of human users of the system may not arise.

b. It may also not be feasible if a cost-benefit analysis is performed. We estimate the ecosystem of users may be to the tune of one million when the system is fully developed[15]. The costs of tracking each user may outweigh the benefits of doing so.

- If the above scenario holds good, a uniform price may need to be fixed for all human initiated verification requests.

Considering that verification requests can also be machine initiated, there could be a need to track systems which are initiating requests.

- This need may arise keeping in view threats such as denial of service (DoS) attacks.
- This need may allow tracking of such customers and thus open up the avenue for differential pricing as well.
- In such cases, a subscription model for machine initiated requests may be explored.

Prepaid versus Postpaid model

Keeping costs low would be an important consideration for the CIDR business model. In this regard, the choice of pre-paid versus postpaid model is an important business model decision which UIDAI would need to take. In our view, based on our present understanding, the prepaid model may be advantageous to the UIDAI for the following reasons:

a. It would reduce administrative overheads for the CIDR related to invoicing and collection.

b. It would provide assured revenues for the services delivered and keep CIDR accounts clear of bad debts.

From a customer standpoint, this will allow:

- Flexibility of initial experimentation with the CIDR
- Identify over a period of time the amount of top-up needed and thus optimize their usage

Other elements that could be studied would be:

- Expiry of prepaid amounts and carryover of credits
- Tiers of top-up that can be allowed to in prepaid model
- Limit on number of searches that can be made in a time period
- Whether free searches can be allowed or not

Addressing concerns of privacy for CIDR services

The business model revolving around CIDR services may be subject to privacy concerns. This may need to be addressed primarily through creation of a legal framework. In majority of the cases, verification through CIDR would be for services initiated by the resident. Assent of the resident could be taken as part of the service delivery procedure.

Other business model considerations

There are three business model considerations which need to be seen in the context of retaining strategic control over the Managed Service Provider.

a. Who will manage collections for services provided?

b. Who will design CIDR services in response to emerging opportunities?

c. Who will market CIDR services?

These have been discussed in detail in the section pertaining to Procurement Challenges.

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[15] Panchayati Raj Institutions in India are likely to be key users of the system. Assuming an average of 2 users per Gram Panchayat, this user group itself may number nearly 4,00,000. The group of Banking and Financial Institutions that may use CIDR services may be assumed to be to the tune of 100,000 at a minimum taking into account all branch offices as well who may access the system to allow opening of new accounts. Assuming an average of 4 users per service delivery centre, this group may account for about 400,000 users.

Approach to pricing of services

Various approaches could be taken for pricing of CIDR services. While discovery of price points could be done through a consultative approach by UIDAI on a case-to-case basis and it will vary with time, following are some dimensions along which pricing could be done:

a. Customer segment: The CIDR services shall be accessed by Government as well as non-Government agencies. The UIDAI approach paper takes into account a subsidized pricing for Government agencies. Non-Government agencies providing commercial services may be charged full price. They could subsequently recover it from customers.

b. Purpose for which verification is sought: CIDR services will play a key role in delivery of socially relevant services. It will also be used for commercial purposes or for Government services where the citizen is paying a high service fee (e.g. Purchase of property). Such services shall be priced differently from those services which are part of social welfare initiatives. There could also be a gradation of pricing for commercial or high value Government services.

c. Time when CIDR is being accessed for verification: The CIDR could see peak periods of demand on a daily, weekly, monthly and yearly basis. A variable pricing model could be adopted by CIDR as such peak periods will see greater usage of CIDR resources.

d. Scope of search - Universal search versus Subset search – Standard or Ad-hoc search: In many instances the person submitting the verification request has more information available to limit the scope of search. This provides the option of limiting the search which can reduce the processing load on CIDR. This is, therefore, an option that could be used for designing CIDR's service offerings. Since the data fields of CIDR are well-defined and each customer has a definite purpose for seeking verification, the system could be tuned to respond fast to standard queries. Various combinations could be considered to create standard offerings.

e. Response time requirements: Depending upon the purpose for which the verification is being sought, the customer may have certain response time requirements.

More such dimensions could be explored in defining CIDR service offerings. Keeping in view the above considerations, various service offerings could be designed. Shown below is an illustration of the various options that could be explored as part of the engagement.

(Only for illustration purposes)

Service	Service Characteristics					
	Customer Segment	Purpose	Time of Access	Scope of search	Response time requirements	Price band per search
A	Govt.	Social (Issue of NREGS Job card)	Low load	Standard	24 hours	INR 5-10
B	Govt.	Commercial (Property purchase, Vehicle Registration)	Peak load	Standard	1 hour	INR 200-300
C	Govt.	Social (Entrance exam - IIT JEE or CAT)	Peak load	Standard	Immediate	INR 50
D	Non-Govt.	Commercial (Issue of home loans)	Low load	Standard	24 hours	INR 200 INR 500
E	Non-Govt.	Commercial (5-star Hotel Check-in)	Peak load	Standard	Immediate	INR 500
F	Govt.	Social (Police verification)	Peak load	Ad hoc	Immediate	Free (?)

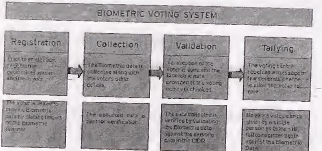
Value added services of CIDR

CIDR support for Government initiatives – Biometric voting

Various initiatives of the Government of India require extensive identity verification. One key example is the election process. The Election Commission of India incurs significant costs every year in authentication of voters. The following are key challenges that are faced in the election process:

a. Verification of identity of the voter
b. Verification of age of the voter
c. Ensuring that only 1 vote is cast by a voter
d. Tracking non-voters

With the implementation of CIDR, it could be possible to integrate Electronic Voting Machine (at least in cities to begin with) with it for meeting challenges [a] and [b]. Additional software based on CIDR by the Election Commission can ensure achievement of objectives [c] and [d] above.


BIOMETRIC VOTING SYSTEM
Registration
Prior to an election, registration determines who is eligible to vote
The voter is asked to provide Biometric data by placing fingers on the Biometric scanner
Collection
The Biometric data is collected along with the voters other details
The collected data is sent for verification
Validation
Verification of the voter is done and the Biometric data provided at the voting centre is checked.
The data collected is verified by validating the Biometric data against the existing data in the CIDR
Tallying
The voting centre receives a message in few seconds whether to allow the voter to vote
No extra votes can be given by a single person as he will fail to register again against the Biometric Data

- Biometric technologies can be independent from the underlying voting protocol
- Speed and ease of use of the identification process can be dramatically improved
- Reduces chance of fraudulent or non-authorized votes
- Cost reduction is achievable in the medium long term

In the above model, a part of the costs incurred or cost savings derived on account of use of CIDR in conduct of the election process may be paid for utilization of CIDR services.

Transaction security in banking services – Biometric vaults and ATMs

In many banking services such as access to lockers/vaults, high value money transfers or access to ATM, there is a need for authentication of identity of the person. For such services, the CIDR could provide back-end support. In such cases, payments could be taken on a per transaction basis with customized pricing.

Since biometric technology can be used in the place of PIN codes in ATMs, its benefits mostly accrues to rural and illiterate masses who find it difficult to use the keypad of ATMs. Such people can easily provide their fingerprints at ATMs machines and proceed for their transactions. Use of biometric technology has its high cost implications to banks if they have to build the databases from scratch. They can instead leverage on the CIDR.

Issuance of digital signatures

Going forward India is likely to see increasing usage of digital signatures. Establishing the identity of a person at the time of issuance of digital signatures is an important activity. Going forward there can be significant linkages between the processes of issuance of digital signatures with the CIDR for identity verification.

Issuance of Goods and Services Tax Registration Number

India is moving into the Goods and Services Tax ("GST") regime in the near future. This may see a process of amendments to existing taxpayer registration and issuance of the GST registration number.

There is a high degree of risk associated with issuance of registration numbers under a Value Added Tax regime. One key risk is related to VAT refunds. It is, therefore, essential to uniquely identify the businesses with which an individual is associated in various capacities. In the present scenario, this is difficult to establish as impersonation is possible. The UIDAI could partner with Commercial Tax Departments during the rollout of GST to utilize the CIDR for identity and address verification. Similar ideas could be explored during the course of the engagement.

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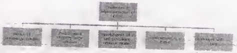
Implementation of CIDR



The implementation of CIDR has two tracks associated with it.

- The first track is that of the core technology implementation and ensuring that it emerges the way it was conceived. This phase essentially maps into the following stages of the TOGAF framework.
    - Opportunities and Solutions
    - Implementation Planning
    - Implementation Governance and
    - Architecture Change Management
- The second track pertains to program benefits and change management to ensure that the CIDR rollout contributes to the successful launch of the UID program.

In this chapter we shall discuss the approaches and methodologies for both these tracks. We shall start with our approach to program benefits and change management.

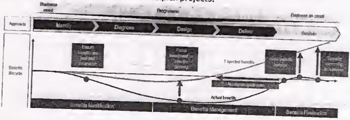
Program Benefits and Change Management

Managing program benefits

Any large scale IT implementation program such as the CIDR involves numerous stages of:

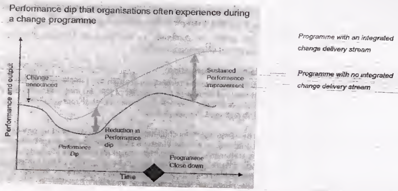
- Conceptualization & Alignment with Business Strategy
- Design & Development and
- Implementation

Ernst & Young's **Identify, Diagnose, Design, Deliver and Sustain** methodology ["IDDDS methodology"] is tailored to help our teams ensure that Program Delivery, Change Delivery and Benefits Delivery go hand-in-hand in such complex projects.



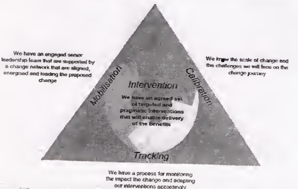
Managing change

CIDR implementation is essentially a large-scale change management initiative. In our point of view, successful change delivery approach should not only focus on the project life cycle but also focus on sustaining the change post project. The chart below illustrates the likely nature of benefits that UIDAI can derive from the CIDR if an integrated change management program is implemented vis-à-vis absence of such a program.



It is in this context that we suggest use of a three-step approach to managing the change. It recommends the following interventions:

- Clear communication of the scale of change and the challenges likely to be faced
- Install a process for monitoring the impact of change and calibrate interventions accordingly
- Engage senior leadership team and promote creation of a change network leading the change


We have an engaged senior leadership team that are supported by a change network that are aligned, energised and leading the proposed change
We know the scale of change and the challenges we will face on the change journey
Mobilisation
Calibration
Intervention
We have an agreed set of targeted and pragmatic interventions that will enable delivery of the benefits
Tracking
We have a process for monitoring the impact the change and adapting our interventions accordingly

We shall facilitate these interventions during the Project Management phase. Some key steps that we would undertake would include:

- Monthly status reporting highlighting achievements till date, progress vis-à-vis the original plans and key risks that are emerging and their mitigation.
- Workshops with enrollment agencies to help them understand the requirements for integration with the CIDR and how to use the workflows created
- Gathering and assessing the feedback received from pilot phases of the project
- Through review of deliverables and performance assist the MSP in improving management of the CIDR

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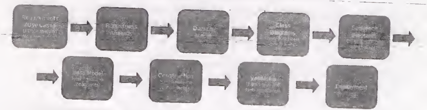
- Assist in development of managerial capacity within the UIDAI to manage the project once the consultant's tenure of 36 months is completed.
- Act as an agent for continuity in the program through effective knowledge management and knowledge transfer.

Approach for technology implementation

Considering the exploratory nature of the technology solution to be implemented, traditional models of software development may not be appropriate. In light of this, we may need to explore alternative development methodologies and these may need to be incorporated appropriately in the Request for Proposal document for the Managed Service Provider.

Based on our present understanding of the challenges in CIDR implementation, one of the methodologies that we could evaluate is the Vinnfuse Enterprise Architecture ("Vinnfuse EA") methodology. This is comprehensive light weight Enterprise Architecture Methodology which leverages the best of UML, ICONIX and adds the non-functional aspects of the system. It consists of engineering processes and leading practices all the way from requirements through analysis, design, construction, testing, deployment and post production. Vinnfuse EA enables systems to be built in a robust and cost effective way. It can also reduce the time for deployment.

Vinnfuse Enterprise Architecture (Vinnfuse EA)



The key outputs that a System Integrator operating under this methodology may deliver would be:

- Use case model
- Domain model
- Class diagrams
- Sequence diagrams
- Data model
- Code and Unit Test Results

Assuming that validation shall be done by Ernst & Young, the output of validation activities shall be a deliverable for Ernst & Young.

Strategy for deployment

Considering the complexity of development and that the technology risks for the project revolve primarily around the biometrics matching engine, from a risk management point of view, we may need to adopt a phased development and rollout approach with a pilot rollout phase to allow the solution to stabilize.

In our initial assessment, as an illustration, we could consider rollout of the modules in the following sequence:

- Phase I
    - a. Biometrics data matching
    - b. Unique ID generation

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    c. Basic minimum workflow modules required for pilot – primarily Registrar oriented functionalities

- Phase II
    a. Verification module
    b. Basic minimum workflow modules required for pilot – primarily functionality for users of UID verification facilities
- Phase III
    a. Support workflow modules

The strategy for Go-live are tightly linked to:

- Overall technology solution and the constraints that may emerge during design or development.
- Availability of finance and how funding can be done to reduce overall program cost.
- Approach for promotion of the Know Your Resident program. This should factor in political and legal support for the UID program, support from key agencies which will enroll residents and public opinion about the utility of UID.

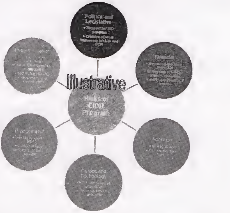
A strong risk management program will be key to successful implementation and Go-Live of the CIDR. Keeping the above in view, we will discuss the following here:

- Key risks we foresee in CIDR implementation as an outline of the approach we will adopt and
- An overview of our globally recognized Risk Management Methodology and Tools

Managing risks in CIDR implementation

The Central ID Data Repository (CIDR) will be the core of the UID system. Such a large system which will play a key role in citizen service delivery and riding high on the expectations cannot afford to fail. Mapping the risk universe for the program will require a complex exercise requiring a structured approach. We illustrate our approach through some examples below.

The risk universe for the CIDR program may be created as illustrated below. Each area of risk can be further analyzed for its likelihood of occurrence, likely impact and the mitigation approach required.



- Political and legislative: The UID project is a visionary project that needs sustained support and adoption of both the Central, State as well as Local governments to deliver results. The legal framework around CIDR services is yet to be formalized. Any change of leadership or Government could lead to a change of project leadership. Inability to create the necessary legal framework may negatively impact the revenue model of CIDR. Thus the project has significant political and legislative risks.

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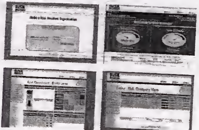
- Financial risks: Two key financial risks for the project will be:
    - Viability of the revenue model projected for the MSP operating the CIDR services and
    - The overall budget estimated for CIDR and the requisite approvals from Government of India for the same. There may be a possibility of strong public opinion emerging for or against the CIDR once the budgetary estimates are finalized as part of the DPR.

- Adoption and public opinion: Degree of adoption will have significant impact on both the Economic and Social Return on Investment in this project. Some key factors that could hinder adoption would be:
    - Concerns around privacy and any mishaps or near-mishaps in data security
    - High cost of compliance to registrars
    - Limited or no value seen by agencies using UID
    - Deliberate attempts to delay or deny enrolment



- Information security and Force majeure: The CIDR essentially has to be a zero-data loss system. Hence the impact of force majeure risks on this project is amplified. This may need to be addressed through appropriate technology and process designs.

- Project risks and public opinion: The consulting assignment involves significant risks in the design, procurement and implementation phases. Key decisions and/or delays may attract significant media attention in turn affecting public opinion. This calls for strong project and risk management.

Risk Manager Tool to manage and monitor Program Risks

Considering the complexity of the CIDR implementation program, EY will use its Risk Manager Tool as an integral part of Program Management.

'Risk Manager' will be available to UIDAI the management as well for monitoring the effectiveness of risk management across the CIDR program in a cost effective and transparent manner.

The tool integrates risk information and allows multiple views and reporting options to monitor and manage the risks as a process, on an ongoing basis.

Approach for testing and third party quality assurance of CIDR

Following would be the key quality assurance activities that will be carried out during the implementation phase.

- Conformance verification and testing of standards and compliance - Verify that the implementation confirms to various ISO and UID standards specifications on an ongoing basis.

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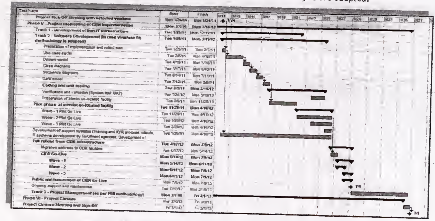
- Functional Compliance: Ensure the system complies to the functional requirements as per the specifications on an ongoing bases. We may develop test automation suites to aid in faster testing.
- Non-Functional Requirements Compliance: This will include verification of the following - System reliability, system performance, scalability, interoperability, energy consumption, security.
- In addition to these verifications we need to have technical and process audits and various points in the life-cycle to identify issues if any and provide for remedial measures.

Measures that may form scope of third party auditor shall be included as part of the terms of reference to be drafted.

Consolidated view of work streams during CIDR implementation

We depict below a high level view of how the CIDR rollout is likely to emerge in terms of sequence of activities and illustrative timelines if the above approach and methodologies are adopted.



Task Name	Start	Finish
Project Kick-Off Meeting with selected vendors	Mon 1/24/11	Mon 1/24/11
Phase V - Project monitoring of CIDR implementation	Mon 3/1/10	Mon 2/18/13
Track 1 - Development of Non-IT infrastructure	Tue 1/25/11	Mon 12/12/11
Track 2 - Software Development (in case Waterfall SA methodology is adopted)	Tue 1/25/11	Mon 3/19/12
Preparation of implementation and rollout plan	Tue 1/25/11	Mon 2/7/11
Use case model	Tue 2/8/11	Mon 4/18/11
Domain model	Tue 4/19/11	Mon 5/16/11
Class diagrams	Tue 5/17/11	Mon 6/13/11
Sequence diagrams	Tue 6/14/11	Mon 7/11/11
Data model	Tue 7/12/11	Mon 8/8/11
Coding and unit testing	Tue 8/9/11	Mon 3/19/12
Verification and validation (System test UAT)	Tue 1/24/12	Mon 3/19/12
Preparation of interim co-located facility	Tue 2/8/11	Mon 11/28/11
Pilot phase at interim co-located facility	Tue 11/29/11	Mon 4/16/12
Wave - 1 Pilot Go Live	Tue 11/29/11	Mon 4/16/12
Wave - 2 Pilot Go Live	Tue 1/24/12	Mon 4/16/12
Wave - 3 Pilot Go Live	Tue 3/20/12	Mon 4/16/12
Development of support systems (Training and KYR process rollouts, IT systems development by Enrollment agencies, Development of	Tue 1/25/11	Mon 4/16/12
Full rollout from CIDR infrastructure	Tue 4/17/12	Mon 7/9/12
Migration activities to CIDR facilities	Tue 4/17/12	Mon 5/14/12
CIDR Go-Live	Mon 5/14/12	Mon 7/9/12
Wave - 1	Mon 5/14/12	Mon 6/11/12
Wave - 2	Mon 6/11/12	Mon 7/9/12
Wave - 3	Mon 6/11/12	Mon 7/9/12
Public announcement of CIDR Go-Live	Mon 7/9/12	Mon 7/9/12
Ongoing support and maintenance	Tue 7/10/12	Mon 2/18/13
Track 3 - Project Management (as per PMI methodology)	Mon 3/1/10	Fri 2/1/13
Phase VI - Project Closure	Mon 2/4/13	Fri 3/1/13
Project Closure Meeting and Sign-Off	Fri 3/1/13	Fri 3/1/13

We would like to conclude with the thought that CIDR implementation is a technology enabled change initiative. Majority of its benefits will be realized after the implementation project is completed. UIDAI would need to start preparations for post-implementation management during this phase of the project while the Ernst & Young team shall ensure that the change approach leaves behind adequate methods for support.

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Appendix B

REPORTING REQUIREMENTS

Reporting requirements will be mutually finalized by the Consultant and the Employer during the Project Management phase based on the following template

SI. No.	Deliverable	Format	No. of copies	Contact person for submission	Timeline of submission
		Hard & Soft copy	Hard Copy: 2 Soft Copy 1		

Appendix C

STAFFING SCHEDULE

Team Composition and Task Assignments for Consultancy Assignment

Professional Staff

S No.	Name of Staff	Areas of Expertise	Position Assigned	Task Assigned
1.	Sunil R. Chandiramani	▶ IT strategy ▶ eGovernance programs ▶ Program Management ▶ Change management ▶ Risk management ▶ Business process redesign	Project Director	▶ Establish overall CIDR project management strategy ▶ Establish linkages between the underlying objectives of the UID project and the technical solution ▶ Prepare CIDR Implementation Strategy and Plan ▶ Direct development of procurement strategy ▶ Lead setting up of Project Governance Procedures ▶ Monitor overall project progress and provide direction ▶ Periodically assess project resourcing and ensure it is in line with proposed deployment and adequate for project requirements ▶ Assess project risks and ensure timely resolution ▶ Manage project scope
2.	Satish Koshal	▶ IT solution ▶ IT Architecture and design ▶ Quality management ▶ System performance management	Program Manager	▶ Establish overall CIDR project management strategy ▶ Establish linkages between the underlying objectives of the UID project and the technical

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S.No.	Name of Staff	Areas of Expertise	Position Assigned	Task Assigned
		▶ Business planning ▶ Customer relationship ▶ Vendor management ▶ Work force management ▶ Costing and Accounting		solution ▶ Prepare CIDR Implementation Strategy and Plan ▶ Implement Project Management Office procedures ▶ Manage the procurement process ▶ Project Integration Management, Monitor progress of various tracks of work and facilitate direction of their work ▶ Lead Quality Assurance of deliverables ▶ Implement Knowledge Management procedures ▶ Lead stakeholder communication ▶ Provide periodic status updates to the UIDAI
3.	Rajesh Kumar	▶ IT Project Management ▶ Consulting Project management ▶ Designing Solution Architecture including database, storage, networking and security architecture ▶ Software Development Life Cycle - SDLC management ▶ IT Strategy and Roadmap ▶ Business Planning ▶ Preparation of EOI, RFP and Bid Management ▶ People Management & handling large team	Project Manager (IT Systems)	▶ Manage and deliver Information systems architecture ▶ Review outputs of the solution architecture team and ensure quality of deliverables ▶ Monitor progress of software development during CIDR implementation ▶ Rollout software quality review procedures and lead review of vendor deliverables ▶ Establish evaluation criteria for MSP for delivery of software
4.	Rajkumar TV	▶ Power Sector (Transmission & Distribution) ▶ Data Center Planning, design, implementation and operations ▶ Cross functional experience of large Project Management including Site management, Erection, Commissioning, Contract Management, functions in the Infrastructure Sector	Project Manager (Data Centre Infrastructure)	▶ Lead design of Data Centre requirements ▶ Review data centre requirements and ensure quality ▶ Ensure timely delivery of data centre

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S.No.	Name of Staff	Areas of Expertise	Position Assigned	Task Assigned
		▶ End-to-end implementation of large projects from initial stages of scoping, techno-commercial feasibility studies to material / machinery procurement, execution to final stages of implementation, quality compliance and acquiring of statutory approvals		
5.	Samir Bali	▶ Strategy formulation ▶ Business Planning ▶ Developing business models and revenue streams ▶ Restructuring and Reform advisory	Strategy Consultant	▶ Identify revenue streams for the CIDR ▶ Create business case for the revenue streams identified ▶ Identify and develop strategies through which innovative identity-based services and other value-added services can be offered by the CIDR, based on a business model
6.	Srinivas Varadarajan	▶ Enterprise Architecture ▶ Software Engineering & Methodologies ▶ Product Development ▶ Research & Innovation ▶ Solution Architecture ▶ Managing centers of excellence ▶ Deployment Architecture ▶ Data center Consolidation	Principal Architect	▶ Ensure resiliency through appropriate architectures incorporation of technologies such as virtualization and cloud computing ▶ Develop acceptance testing methodology and procedures for the complete CIDR system ▶ Define functional and non-functional requirements of the IT system ▶ Evaluate bid responses and assist in technical evaluation ▶ Review and establish conformance of the solution developed with the envisioned architecture ▶ Develop testing strategies for the CIDR
7.	Mahesh Trivedi	▶ Designing data centers ▶ Management of data center infrastructure including but not limited to Power, UPS, Cooling, Racks,	Data Centre Design Specialist	▶ Design the data centre requirements for CIDR ▶ Specify parameters for selection of site for CIDR data centre

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S No.	Name of Staff	Areas of Expertise	Position Assigned	Task Assigned
		Cabling etc ▶ Data Center day to day management ▶ End to end data center operations		▶ Review terms of reference outlined for the MSP from a data centre perspective ▶ Provide inputs for evaluation of bids submitted ▶ Review the conformance of data centre developed to the specifications outlined ▶ Identify and implement Green IT solutions
8	Prasad Srinivasachar	▶ Database Architecture and Design ▶ Database Performance Analysing & Tuning, Benchmarking ▶ Data Modeling ▶ Informix DBA ▶ DBA support for Sales Data Warehouse ▶ Software Development Methodologies	Solution Architect (Database, Server, Storage)	▶ Build a 5 and 10 year growth model for the CIDR ▶ Develop a methodology for workload analysis and sizing of database, storage ▶ Estimated expected processing load and distribution of load across the various technology components (specifically, the backend servers and storage) ▶ Design database, server and storage architecture ▶ Develop requirements for database, server and storage ▶ Review database design carried out by the vendor and confirm conformance to specifications
9	Sanjeev Patil	▶ Network Design (LAN and WAN) ▶ Security Architecture Assessment ▶ IT Infrastructure Assessment, Server Hardware, Network and security component ▶ Internetworking, Protocols, TCP/IP, HTTP, Network Design, trouble shooting, Solaris & HP-UX, and Clear case ▶ DC & DRC Build Assessment ▶ IT Data Center technologies including Systems,	Solution Architect (Networking & Security)	▶ Develop a methodology for workload analysis and sizing of network ▶ Design network architecture required for CIDR after careful evaluation of alternative technologies ▶ Design Security architecture for the CIDR [End point security, messaging security, data protection] ▶ Create Network and Security requirement

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S No.	Name of Staff	Areas of Expertise	Position Assigned	Task Assigned
		Networking and Software ▶ Offshore Development Center, both intranet and extranet sites		specifications ▶ Review bid responses from a security and network standpoint
10.	Srivatsa Krishnaswamy	▶ Entire IT life cycle experience ▶ Application Development – from requirements development to solution ▶ Full DBMS Development and Database ▶ Application Performance Management ▶ SOA, BPM, Web Services ▶ Application and DB Security ▶ Proposals, Business Development ▶ Setting up Centers of Excellence. Managing Architects ▶ Enterprise Architecture, Teaching and practice ▶ KM , Innovation and R&D ▶ Telecom/Mobile Services, Protocols, Video on Demand	Application Architect	▶ Establish Architecture Principles ▶ Build a 5 and 10 year growth model for the CIDR ▶ Develop Information Systems and Technology Architecture ▶ Assess growth and capacity demands of CIDR ▶ Develop innovative, realistic and cost-effective ways for CIDR implementation Providing sufficient scalability in the CIDR ▶ Recommend adoption of emerging technologies relevant to the CIDR ▶ Review bids received ▶ Monitor the emerging solution architecture and ensure alignment to the architecture envisioned
11.	Dr. Anoop Namboodiri	▶ Biometrics, Pattern Recognition ▪ Camera-based biometrics ▪ Secure Biometric Systems ▪ Forgery Detection ▪ Biometric Indexing ▪ Handwriting Recognition ▪ Imaging and Analysis of 3D surface textures	Biometric Specialist	▶ Review the biometrics standards specified by the UIDAI committee ▶ In consultation with Dr. Wayman and Dr. Gupta, design the biometric matching engine for the CIDR ▶ Design biometrics system requirements in line with the business requirements ▶ Assist the UIDAI in developing/modifying policy requirements suitable for reliable operations of the CIDR
12.	Venkatesh Kulkarni	▶ IT Risk Management ▶ Information security,	Senior Consultant (Risk Management)	▶ Risk Management Strategy and Plan for the CIDR

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S No.	Name of Staff	Areas of Expertise	Position Assigned	Task Assigned
		▶ Business Continuity and Disaster Recovery Planning. ▶ Data Center advisory services. ▶ Security architecture design & implementation. ▶ Data classification, ▶ Data privacy, ▶ Identity & Access Management. ▶ IT Governance, ▶ ITIL and ISO 20000 advisory service, ▶ ISO 27001 assessment and advisory. ▶ IT general controls (ITGC)		▶ Developing the Disaster Recovery Plan (DRP) and Business Continuity Plan (BCP) for the CIDR ▶ Review data centre controls and procedures implemented by the vendor and establish conformance to the specifications ▶ Develop Service and Operational Level Agreements for the CIDR IT infrastructure ▶ Develop data security requirements ▶ Verify implementation of the disaster recovery and business continuity plans by the vendor
13.	Ponkumar Venkatesh	▶ Design of large Internet based applications for safe guarding against security threats, vulnerabilities, cyber and phishing attacks ▶ Information Security Policy Design ▶ Assessment of Information Security Policies & Implementations ▶ Attack & Penetration ▶ Infrastructure security assessment ▶ Application security assessment ▶ Public Key Infrastructure ▶ Security architecture design & implementation ▶ Information Risk Management ▶ Identity & Access Management ▶ IT Security Strategy ▶ Project Management	Senior Consultant (Information Security)	▶ Develop Information Security Plan and Procedures for the CIDR ▶ Developing the Disaster Recovery Plan (DRP) and Business Continuity Plan (BCP) for the CIDR ▶ Design and conduct security tests on the solution implemented by the MSP

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S. No.	Name of Staff	Areas of Expertise	Position Assigned	Task Assigned
	Wayman	▶ Design of large scale systems		biometrics standards committee ▶ Design the biometric matching engine for the CIDR ▶ Design standards requirements for the CIDR such that ▶ Assist in reviewing implementation done by the vendor and provide guidance to achieve a successful implementation
3.	Guru Malladi	▶ IT Strategy / eGovernance ▶ Reform and Restructuring Advisory ▶ Government Policy & Regulation ▶ Investment Advisory ▶ Financial & Administrative Reforms ▶ Business Process Re-engineering ▶ Bid process management	Associate Project Director	▶ Establish overall CIDR project management strategy ▶ Establish linkages between the underlying objectives of the UID project and the technical solution ▶ Prepare CIDR Implementation Strategy and Plan ▶ Lead setting up of Project Governance Procedures ▶ Monitor overall project progress and provide direction ▶ Periodically assess project resourcing and ensure it is in line with proposed deployment and adequate for project requirements

Support Staff

***Note: As per the clarifications issued by Unique Identification Authority of India, the name of the support staff could be firmed up later. Hence we are only disclosing the positions at this stage. If the assignment is awarded to Ernst & Young, the name and profile of actual support staff to be deployed will be furnished to UIDAI.**

S. No.	Name of Staff	Areas of Expertise	Position Assigned	Task Assigned
1.	Dr. Anil K. Jain	▶ Biometric Matching Algorithm ▶ Algorithm development ▶ Fusion of modalities	Team Mentor	▶ Assess requirements of the matching engine required for CIDR in line with the business requirements of UIDAI with respect to the CIDR and the standards specified by the biometrics committee ▶ Provide inputs on the suitable matching algorithms that can be used for efficient CIDR implementation ▶ Assist in reviewing implementation done by the vendor and provide guidance to achieve a successful implementation ▶ Ensure that the solution implemented reduces vendor lock-in to the extent possible and total cost of the system are kept within manageable limits
2.	Dr. James L	▶ Biometric Standards	Biometrics Standard Specialist	▶ Review recommendations of the

S. No.	Name of Staff	Areas of Expertise	Position Assigned	Task Assigned
				▶ Assess project risks and ensure timely resolution ▶ Manage project scope
4.	Satish Kaushal	▶ Experience of large scale Government Projects ▶ Relationship Management ▶ Client Handling ▶ Solution Sales ▶ Vendor Management	Relationship Director	▶ Assist in mapping key stakeholders of the project ▶ Create stakeholder engagement plan ▶ Lead stakeholder management initiatives of the project ▶ Manage relationships with the large community of stakeholders involved in the project
5.	Consultant*	▶ IT Laws ▶ Indian Laws and legislation	Legal Expert	▶ Assist in drafting the contract to be signed with the vendors ▶ Review terms and conditions, if any, proposed by vendors which are exceptions to the terms proposed in the draft contract as part of RFP ▶ Assist in identifying the legal risks for the project and provide inputs to the Risk Management track
6.	Consultant*	▶ Procurement strategy for large IT projects ▶ Bid Management ▶ Vendor Management	Procurement Specialist	▶ Assist UIDAI in evaluating alternatives for and develop the procurement strategy ▶ Develop the evaluation methodology for vendors

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S. No.	Name of Staff	Areas of Expertise	Position Assigned	Task Assigned
				▶ Design and manage the bid process ▶ Facilitate conduct of pre-bid meeting ▶ Manage the bid evaluation process
7.	Consultant*	▶ Program Management	Program Management Unit Team Member 1	▶ Assist in program management
8.	Consultant*	▶ Program Management	Program Management Unit Team Member 2	▶ Assist in program management
9.	Consultant*	▶ Program Management	Program Management Unit Team Member 3	▶ Assist in program management
10.	Consultant*	▶ Business Planning ▶ Strategy Development ▶ Feasibility study	Business Strategy Support	▶ Assist in development of revenue models and business cases for the CIDR
11.	Consultant*	▶ Data Centre Planning ▶ Data Centre Designing ▶ Data Center implementation ▶ Data Center operations	Program Manager Data Centre	▶ Oversee development of the Data Centre
12.	Consultant*	▶ Biometrics	Biometric Expert 2	▶ Evaluate the biometric system design from an implementation perspective ▶ Identify and highlight risks in the solution being proposed
13.	Consultant*	▶ Solution Architecture	Solution Architect	▶ Providing support to Data Center design specialist in Architecture of ○ HVAC

S. No:	Name of Staff	Areas of Expertise	Position Assigned	Task Assigned
				○ Electrical ○ Mechanical etc ▶ Validate the specifications with industry standards components
14.	Consultant*	▶ Domain Architects (HVAC, Civil, Fire, Power)	Domain Architects (HVAC, Civil, Fire, Power)	▶ Architect and oversee implementation of Non-IT infrastructure required for the CIDR
15.	Consultant*	▶ Business Continuity	BCP Expert	▶ Assist in development of Disaster Recovery and Business Continuity Plans ▶ Assist in the conduct of Disaster Recovery and Business Continuity Procedures
16.	Consultant*	▶ Information Security	Information Security Expert	▶ Assist in development of Information Security Plan and Procedures ▶ Assist in conduct of information security related tests on the system ▶ Review information security implementation in the CIDR and assist in its alignment to the IS Plan and IS architecture created
17.	Consultant*	▶ Testing	Testing Team Member 1	▶ Study testing strategy and develop system test cases ▶ Assist in user acceptance testing of

S. No.	Name of Staff	Areas of Expertise	Position Assigned	Task Assigned
				the CIDR
18.	Consultant*	▶ Testing	Testing Team Member 2	▶ Study testing strategy and develop system test cases ▶ Assist in user acceptance testing of the CIDR
19.	Consultant*	▶ Testing	Testing Team Member 3	▶ Study testing strategy and develop system test cases ▶ Assist in user acceptance testing of the CIDR

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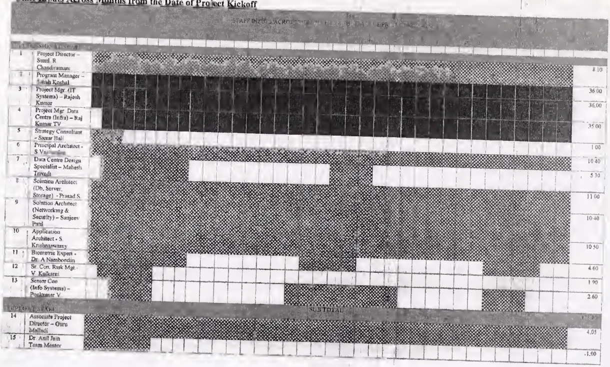
Staff Inputs Across Months from the Date of Project Kickoff



1	Project Director – Sunil R Chandiramani	8 10
2	Program Manager – [illegible]tish Koshal	36 00
3	Project Mgr. (IT Systems) – Rajesh Kumar	36,00
4	Project Mgr. Data Centre (Infra) – Raj Kumar TV	35 00
5	Strategy Consultant - Samir Bali	1 00
6	Principal Architect - S Va[illegible]	10 40
7	Data Centre Design Specialist – Mahesh Trivedi	5 30
8	Solution Architect (Db, Server, Storage) - Prasad S.	11 00
9	Solution Architect (Networking & Security) – Sanjeev Patil	10 40
10	Application Architect - S. Krishnaswamy	10 50
11	Biometric Expert - Dr. A Namboodiri	4 60
12	Sr. Con. Risk Mgt - V. Kulkarni	1 90
13	Senior Con (Info Systems) – Poukumar V.	2 60
	SUB TOTAL	[illegible]
14	Associate Project Director – Guru Malladi	4.05
15	Dr. Anil Jain Team Mentor	-1.00

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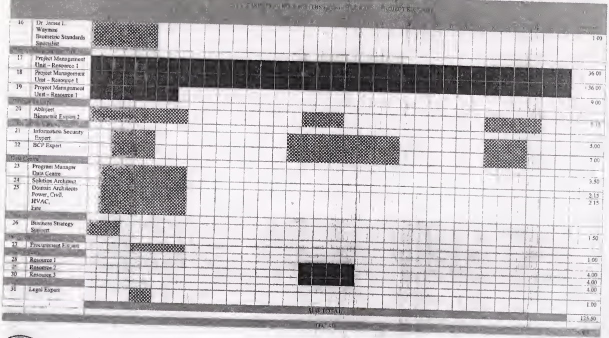
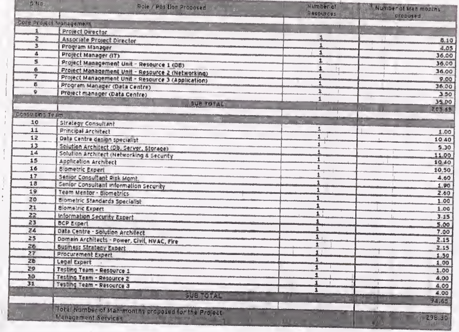


16	Dr James L. Wayman Biometric Standards Specialist	1.00
	[illegible]	
17	Project Management Unit – Resource 1	
18	Project Management Unit – Resource 1	36.00
19	Project Management Unit – Resource 1	36.00
	[illegible]	9.00
20	Abhijeet Biometric Expert 2	
	[illegible]	[illegible]
21	Information Security Expert	
22	BCP Expert	5.00
	Data Centre	7.00
23	Program Manager Data Centre	
24	Solution Architect	3.50
25	Domain Architects Power, Civil, HVAC, Fire	2.15 2.15
	[illegible]	
26	Business Strategy Support	
	[illegible]	1.50
27	Procurement Expert	
	[illegible]	
28	Resource 1	1.00
29	Resource 2	4.00
30	Resource 3	4.00
	[illegible]	4.00
31	Legal Expert	
		1.00
	SUB TOTAL	125.50
	TOTAL	

Staffing Plan for Project Management Services



S.No.	Role / Position Proposed	Number of Resources	Number of Man months proposed
Core Project Management			
1	Project Director	1	8.10
2	Associate Project Director	1	4.05
3	Program Manager	1	36.00
4	Project Manager (IT)	1	36.00
5	Project Management Unit - Resource 1 (DB)	1	36.00
6	Project Management Unit - Resource 2 (Networking)	1	9.00
7	Project Management Unit - Resource 3 (Application)	1	36.00
8	Program Manager (Data Centre)	1	3.50
9	Project manager (Data Centre)	1	35.00
	SUB TOTAL		203.65
Consulting Team			
10	Strategy Consultant	1	1.00
11	Principal Architect	1	10.40
12	Data Centre design specialist	1	5.30
13	Solution Architect (Db, Server, Storage)	1	11.00
14	Solution Architect (Networking & Security	1	10.40
15	Application Architect	1	10.50
16	Biometric Expert	1	4.60
17	Senior Consultant Risk Mgmt.	1	1.90
18	Senior Consultant Information Security	1	2.60
19	Team Mentor - Biometrics	1	1.00
20	Biometric Standards Specialist	1	1.00
21	Biometric Expert	1	3.15
22	Information Security Expert	1	5.00
23	BCP Expert	1	7.00
24	Data Centre - Solution Architect	1	2.15
25	Domain Architects - Power, Civil, HVAC, Fire	1	2.15
26	Business Strategy Expert	1	1.50
27	Procurement Expert	1	1.00
28	Legal Expert	1	1.00
29	Testing Team - Resource 1	1	4.00
30	Testing Team - Resource 2	1	4.00
31	Testing Team - Resource 3	1	4.00
	SUB TOTAL		94.65
	Total Number of Man-months proposed for the Project Management Services		298.30

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Appendix D

TOTAL COST OF SERVICES

Item	Cost in INR
1. Total Costs of Financial Proposal for providing consultancy services	5,59,88,800
2. Out of Pocket expenses (OPE's)***	80,10,000
3. Taxes and other duties (Service Tax @ 10.3%)**	65,91,876
TOTAL	7,05,90,676

* Out of Pocket expenses (OPEs) (Reimbursable expenses like all travel costs, accommodation expenses etc. and other miscellaneous expenses which are directly chargeable to the project)

** Any upward movement in Service Tax shall be accordingly compensated by the client.

*** Out of Pocket Expenses have been assumed with the fact that the project shall be executed out of Delhi

BREAKDOWN OF REMUNERATION

Name	Position	Staff Month Rate (A)	Proposed total No. of Man-months (B)	Total Amount in INR (A*B)
Key Professionals				
Sunil R. Chandiramani	Project Director**	0.00	8.10	0.00
Satish Koshal	Program Manager	240,000	36.00	8,640,000.00
Rajesh Kumar	Project Manager (IT Systems)	120,000	36.00	4,320,000.00
Rajkumar TV	Project Manager (Data Centre Infrastructure)	200,000	35.00	7,000,000.00
Samir Bali	Strategy Consultant	160,000	1.00	160,000.00
Srinivas Varadarajan	Principal Architect	250,000	10.40	2,600,000.00
Mahesh Trivedi	Data Centre Design Specialist	208,000	5.30	1,102,400.00
Prasad S. Achar	Solution Architect (Database, Server, Storage)	200,000	11.00	2,200,000.00
Sanjeev Patil	Solution Architect (Networking & Security)	250,000	10.40	2,600,000.00
Srivatsa Krishnaswamy	Application Architect	250,000	10.50	2,625,000.00
Dr. Anoop Namboodiri	Biometric Specialist	500,000	4.60	2,300,000.00
Venkatesh Kulkarni	Senior Consultant (Risk Management)	120,000	1.90	228,000.00
Ponkumar Venkatesh	Senior Consultant (Information Security)	120,000	2.60	312,000.00
Support Staff				
Dr. Anil K. Jain	Team Mentor	2256,000	1.00	2,256,000.00
Dr. James L. Wayman	Biometrics Standard Specialist	1598,000	1.00	1,598,000.00
Guru Malladi	Associate Project Director**	0.00	4.05	0.00
TBD*	Legal Expert	240,000	1.00	240,000.00
TBD*	Procurement Specialist	240,000	1.00	240,000.00
TBD*	Program Management Unit Team Member 1	160,000	36.00	5,760,000.00

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TBD*	Program Management Unit Team Member 2	160,000	36.00	5,760,000 00
TBD*	Program Management Unit Team Member 3	160,000	9.00	1,440,000 00
TBD*	Business Strategy Support	80,000	1.50	120,000.00
TBD*	Program Manager Data Centre	208,000	3.50	728,000.00
Abhijit Singh	Biometric Expert 2	300,000	3.15	945,000 00
TBD*	Data Centre Solution Architect	208,000	2.15	447,200 00
TBD*	Domain Architects (HVAC, Civil, Fire, Power)	208,000	2.15	447,200.00
TBD*	BCP Expert	80.000	7.00	560,000.00
TBD*	Information Security Expert	80,000	5.00	400,000.00
TBD*	Testing Team Member 1	80,000	4.00	320,000.00
TBD*	Testing Team Member 2	80,000	4 00	320,000.00
TBD*	Testing Team Member 3	80,000	4.00	320,000.00

*Note: As per the clarification issued by Unique Identification Authority of India, the name of the support staff could be firmed up later. Hence we are disclosing only the position at this stage. If the assignment is awarded to Ernst & Young, the actual support staff to be deployed will be furnished to UIDAI.

** Given the National importance of the project Ernst & Young's Senior Management is fully committed to the project and in this context:

- The cost for Project Director and Associate Project Director for the projected deployment has been taken as INR 0.00 instead of staff Month rate of INR 16,00,000 each. This discount is for the purpose of the projected deployment ONLY.
- Additionally for the following resources the Staff Month Rate proposed for the purpose of projected deployment is 80% discounted
  - Project Manager (IT Systems)
  - Strategy Consultant
  - Senior Consultant (Risk Management)
  - Senior Consultant (Information Security)
  - Business Strategy Support
  - BCP Expert
  - Information Security Expert

BREAKDOWN OF REIMBURSABLE EXPENSES

(Note: Reimbursable expenses will be quoted only for work related travel outside the place of work decided by the employer in the data sheet. It can also include travel from the Headquarter of the consultant to the place of work).

S.No.	Description	Unit	Quantity	Unit price in INR	Total price in INR
1	International Travel expense flights	Trip	6	300,000	1,800,000.00
2	Domestic Travel expense Flights	Trip	150	15,000	2,250,000.00
3	Hotel Stay	Day	60	8,000	480,000.00
4	Hotel / Guest House Stay	Day	400	4,000	1,600,000.00
5	Local transportation Costs	Day	400	2,000	800.000.00

Total Reimbursable = INR 69,30,000 Total amount in Rupees (or other currency).

Amount in words: Sixty Nine Lakhs Thirty Thousand ONLY

MISCELLANEOUS EXPENSES

S.No	Particular	Unit Rate	Quantity (staff months) / Number	Amount
1	Secretarial staff & preparation of reports / deliverables	36	30,000	10,80,000

Deliverables ,Timelines and Payment Schedule

Deliverable No.	Deliverable	Timelines (in weeks)	Payment Schedule
D1	Programme Management Strategy, Components, Roadmap, and Implementation Plan	T + 6 weeks	Ten (10%) percent of the lump-sum amount quoted for consultancy assignment after acceptance of the deliverable
D2	Strategy, Business Models, Business Cases, and Potential Revenue Streams for CIDR	T + 10 weeks	Ten (10%) percent of the lump-sum amount quoted for consultancy assignment after acceptance of all these deliverables
D3	Implementation Strategy and Implementation Roadmap for the CIDR	T + 12 weeks	
D4	Overview of Functional and Technical Solution of the CIDR, as input to the DPR	T + 12 weeks	Twenty (20%) percent of the lump-sum amount quoted for consultancy assignment after acceptance of all these deliverables
D5	Functional and Technical Requirements Specifications for the non-IT (physical) infrastructure of the CIDR	T + 20 weeks	
D6	Functional and Technical Requirements Specifications for the IT systems of the CIDR	T + 20 weeks	
D7	Detailed Project Report (DPR) for implementation of the CIDR	T + 14 weeks	
D8	Request for Proposals (RFPs): 1) RFP 1: Selection of Data Center Construction Agency to design,	T + 24 weeks	Fifteen (15%) percent of the lump-sum amount quoted for consultancy assignment

	construct, and commission the CIDR facilities (physical infrastructure) 2) RFP 2: Procurement of interim co-location facilities for the CIDR 3) RFP 3: Selection of Managed Service Provider (MSP) to implement, and manage the CIDR		
D10	Risk Management Strategy and Plan for the CIDR	T + 24 weeks	Ten (10%) percent of the lump-sum amount quoted for consultancy assignment after acceptance of all these deliverables
D11	Information Security Plan and Policies for the CIDR	T + 24 weeks	
D12	Disaster Recovery Plan (DRP) and Business Continuity Plan for the CIDR	T + 24 weeks	
D9	Bid Evaluation Reports, consisting of: 1) Pre-qualification evaluation 2) Technical evaluation 3) Commercial evaluation	As per RFP timelines	Ten (10%) percent of the lump-sum amount quoted for consultancy assignment to be made on selection of the Managed Service Provider.
D13	Project Management Reports	Based on project implementation progress	• Fifteen (15%) percent of the lump-sum amount quoted for consultancy assignment upon completion of 'Certification and Go-Live of CIDR' • Five (5%) percent of the lump-sum amount quoted for consultancy assignment upon Acceptance of the 'Terms and Reference for 3rd party Audits' • Five (5%) percent of the lump-sum amount quoted for consultancy assignment upon completion of '3 months of Post Implementation Project Management Services' •

T is date of Project Kick-off Meeting

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Appendix E

DUTIES OF THE "EMPLOYER"

1. Appointment of project co-ordination committee: This project will entail interactions with a large community of stakeholders and also a challenging project delivery schedule. The consultant would request that a Project Co-ordination team be appointed by UIDAI which could facilitate quick turnaround of key decisions and in organization of stakeholder consultations. The UIDAI management along with the PMU will provide the necessary Project Management and Review for the consulting engagement
2. Review and approval of deliverables: Given the challenging timelines, the consultant would request that the timelines and procedures for review and approval of deliverables be frozen during the project inception phase. The consultant would seek UIDAI's support in timely closure of reviews and approvals.
3. Facilities to be made available to consultants in UIDAI's premises:The consultant would like to request UIDAI to please provide for the following in the Project Management Office.
    a. Air conditioned workspace for all members
    b. Meeting room facilities
    c. Audio conferencing facilities
    d. High speed internet connection
    e. Facility for document storage
    f. 5 desktops
    g. Access to office automation and printers and photocopiers
4. Setting up of a Project Deliverables Submission Site: To enable easier collaboration, UIDAI may create an electronic repository/facility where the project deliverables can be submitted.
5. Procurement of licenses: At present the Consultant does not envisage usage of any proprietary tools for preparation of project deliverables. Hence the same has not been budgeted for. However, should a requirement for usage of any such tools arises, the consultant would request UIDAI to procure the licenses for these tools. Further, licenses or any software tools/hardware required for testing the application and infrastructure will have to be provided by UIDAI authority. In the context of user acceptance test of the application, a counterpart team from UIDAI will have to be provisioned to undertake the acceptance testing which shall be guided, assisted and monitored by the Consultant.

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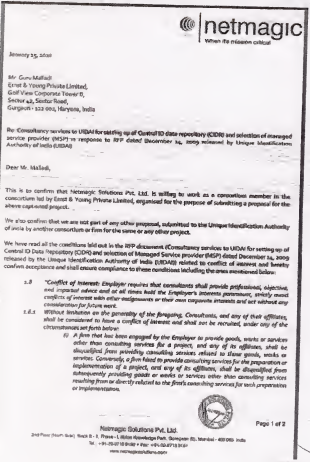
Appendix F: Teaming Agreements with the Consortium Partner/Individual Experts

Teaming Agreement with the Consortium Partner / Individual Expert(s)

Letter of Association with the Consortium Partner, Netmagic Solution Private Limited



netmagic
When its mission critical

January 25, 2010

Mr. Guru Malladi
Ernst & Young Private Limited,
Golf View Corporate Tower B,
Sector 42, Sector Road,
Gurgaon - 122 002, Haryana, India

Re: Consultancy services to UIDAI for setting up of Central ID data repository (CIDR) and selection of managed service provider (MSP) in response to RFP dated December 24, 2009 released by Unique Identification Authority of India (UIDAI)

Dear Mr. Malladi,

This is to confirm that Netmagic Solutions Pvt. Ltd. is willing to work as a consortium member in the consortium led by Ernst & Young Private Limited, organised for the purpose of submitting a proposal for the above captioned project.

We also confirm that we are not part of any other proposal, submitted to the Unique Identification Authority of India by another consortium or firm for the same or any other project.

We have read all the conditions laid out in the RFP document (Consultancy services to UIDAI for setting up of Central ID Data Repository (CIDR) and selection of Managed Service provider (MSP) dated December 24, 2009 released by the Unique Identification Authority of India (UIDAI)) related to conflict of interest and hereby confirm acceptance and shall ensure compliance to these conditions including the ones mentioned below:

1.8 *"**Conflict of Interest:** Employer requires that consultants shall provide professional, objective, and impartial advice and at all times hold the Employer's interests paramount, strictly avoid conflicts of interest with other assignments or their own corporate interests and act without any consideration for future work.*

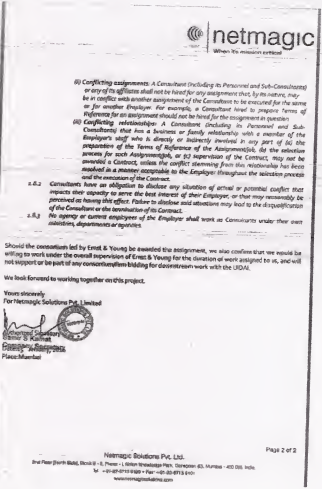
1.8.1 *Without limitation on the generality of the foregoing, Consultants, and any of their affiliates, shall be considered to have a conflict of interest and shall not be recruited, under any of the circumstances set forth below:*

   (i) *A firm that has been engaged by the Employer to provide goods, works or services other than consulting services for a project, and any of its affiliates, shall be disqualified from providing consulting services related to those goods, works or services. Conversely, a firm hired to provide consulting services for the preparation or implementation of a project, and any of its affiliates, shall be disqualified from subsequently providing goods or works or services other than consulting services resulting from or directly related to the firm's consulting services for such preparation or implementation.*

Page 1 of 2

Netmagic Solutions Pvt. Ltd.
2nd Floor (North Side), Block B - 2, Phase - I, Nirlon Knowledge Park, Goregaon (E), Mumbai - 400 063. India
Tel. : +91-22-6718 9190 • Fax: +91-22-6718 9191
www.netmagicsolutions.com

ERNST & YOUNG PVT. LTD. NEW DELHI



netmagic
When it's mission critical

(ii) *Conflicting assignments: A Consultant (including its Personnel and Sub-Consultants) or any of its affiliates shall not be hired for any assignment that, by its nature, may be in conflict with another assignment of the Consultant to be executed for the same or for another Employer. For example, a Consultant hired to prepare Terms of Reference for an assignment should not be hired for the assignment in question*

(iii) *Conflicting relationships: A Consultant (including its Personnel and Sub-Consultants) that has a business or family relationship with a member of the Employer's staff who is directly or indirectly involved in any part of (a) the preparation of the Terms of Reference of the Assignment/job, (b) the selection process for such Assignment/job, or (c) supervision of the Contract, may not be awarded a Contract, unless the conflict stemming from this relationship has been resolved in a manner acceptable to the Employer throughout the selection process and the execution of the Contract.*

2.8.2 *Consultants have an obligation to disclose any situation of actual or potential conflict that impacts their capacity to serve the best interest of their Employer, or that may reasonably be perceived as having this effect. Failure to disclose said situations may lead to the disqualification of the Consultant or the termination of its Contract.*

2.8.3 *No agency or current employees of the Employer shall work as Consultants under their own ministries, departments or agencies.*

Should the consortium led by Ernst & Young be awarded the assignment, we also confirm that we would be willing to work under the overall supervision of Ernst & Young for the duration of work assigned to us, and will not support or be part of any consortium/firm bidding for downstream work with the UIDAI.

We look forward to working together on this project.

Yours sincerely
For Netmagic Solutions Pvt. Limited

Authorized Signatory
Samir S Kamat
Company Secretary
Dated:5 January, 2010
Place:Mumbai

Page 2 of 2

Netmagic Solutions Pvt. Ltd.
3rd Floor (North Side), Block B - 2, Phase - I, Nirlon Knowledge Park, Goregaon (E), Mumbai - 400 063, India.
Tel: +91-22-6713 9100 • Fax: +91-22-6713 9101
www.netmagicsolutions.com

Letter of Association from Dr. Anil Jain

MICHIGAN STATE
UNIVERSITY

January 8, 2010

Mr. Garu Malladi
Ernst & Young Private Limited,
Golf View Corporate Tower B,
Sector 42, Sector Road,
Gurgaon - 122 002, Haryana, India

Re: Consultancy services to UIDAI for setting up of Central ID data repository (CIDR) and selection of managed service provider (MSP) in response to RFP dated December 14, 2009 released by Unique Identification Authority of India (UIDAI)

Dear Mr. Malladi,

This is to confirm that I am willing to work as a sub-contractor in the consortium led by Ernst & Young Private Limited, organized for the purpose of submitting a proposal for the above captioned project.

I also confirm that I am not part of any other proposal, submitted to the Unique Identification Authority of India by another consortium or firm for the same or any other project.

I have read all the conditions laid out in the RFP document (Consultancy services to UIDAI for setting up of Central ID Data Repository (CIDR) and selection of Managed Service provider (MSP) dated December 14, 2009 released by the Unique Identification Authority of India (UIDAI)) related to conflict of interest and hereby confirm acceptance and shall ensure compliance to these conditions including the ones mentioned below:

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1.8.1 Without limitation on the generality of the foregoing, Consultants, and any of their affiliates, shall be considered to have a conflict of interest and shall not be recruited, under any of the circumstances set forth below:

COLLEGE OF
ENGINEERING

Department of
Computer Science
and Engineering

Anil K. Jain
University Distinguished
Professor

Michigan State University
3115 Engineering Building
East Lansing, Michigan
48824-1226

(517) 355-9282
FAX: (517) 432-1061
EMAIL: jain@cse.msu.edu

MSU is an affirmative-action,
equal-opportunity employer

(i) *A firm that has been engaged by the Employer to provide goods, works or services other than consulting services for a project, and any of its affiliates, shall be disqualified from providing consulting services related to those goods, works or services. Conversely, a firm hired to provide consulting services for the preparation or implementation of a project, and any of its affiliates, shall be disqualified from subsequently providing goods or works or services other than consulting services resulting from or directly related to the firm's consulting services for such preparation or implementation.*

(ii) ***Conflicting assignments:*** *A Consultant (including its Personnel and Sub-Consultants) or any of its affiliates shall not be hired for any assignment that, by its nature, may be in conflict with another assignment of the Consultant to be executed for the same or for another Employer. For example, a Consultant hired to prepare Terms of Reference for an assignment should not be hired for the assignment in question*

(iii) ***Conflicting relationships:*** *A Consultant (including its Personnel and Sub-Consultants) that has a business or family relationship with a member of the Employer's staff who is directly or indirectly involved in any part of (a) the preparation of the Terms of Reference of the Assignment/job, (b) the selection process for such Assignment/job, or (c) supervision of the Contract, may not be awarded a Contract, unless the conflict stemming from this relationship has been resolved in a manner acceptable to the Employer throughout the selection process and the execution of the Contract.*

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I look forward to working together on this project.

Yours sincerely

Anil K. Jain

Date: January 8, 2010
Place: East Lansing, Michigan, USA

ERNST & YOUNG PVT. LTD.
NEW DELHI

Letter of Association from Dr. James L. Wayman

James L. Wayman, Ph.D
Consulting Services in Biometrics
1787 Chaparral Road
Pebble Beach, CA 93953
JLWayman@aol.com

January 15, 2010

Mr. Guru Malladi
Ernst & Young Private Limited,
Golf View Corporate Tower B,
Sector 42, Sector Road,
Gurgaon - 122 002, Haryana, India

Re: Consultancy services to UIDAI for setting up of Central ID data repository (CIDR) and selection of managed service provider (MSP) in response to RFP dated December 14, 2009 released by Unique Identification Authority of India (UIDAI)

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(ii) *Conflicting assignments: A Consultant (including its Personnel and Sub-Consultants) or any of its affiliates shall not be hired for any assignment that, by its nature, may be in conflict with another assignment of the Consultant to* *be executed for the same or for another Employer. For example, a Consultant hired to prepare Terms of Reference for an assignment should not be hired for the assignment in question*

(iii) ***Conflicting relationships:*** *A Consultant (including its Personnel and Sub-Consultants) that has a business or family relationship with a member of the Employer's staff who is directly or indirectly involved in any part of (a) the preparation of the Terms of Reference of the Assignment/job, (b) the selection process for such Assignment/job, or (c) supervision of the Contract, may not be awarded a Contract, unless the conflict stemming from this relationship has been resolved in a manner acceptable to the Employer throughout the selection process and the execution of the Contract.*

1.8.2 *Consultants have an obligation to disclose any situation of actual or potential conflict that impacts their capacity to serve the best interest of their Employer, or that may reasonably be perceived as having this effect. Failure to disclose said situations may lead to the disqualification of the Consultant or the termination of its Contract.*

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Should the consortium led by Ernst & Young be awarded the assignment, I also confirm that I would be willing to work under the overall supervision of Ernst & Young for the duration of work assigned to me, and will not support or be part of any consortium/firm bidding for downstream work with the UIDAI.

I look forward to working together on the project.

Yours sincerely

James L. Wayman, Ph.D.
Pebble Beach, CA, USA

15 January, 2010

ERNST & YOUNG PVT. LTD.
NEW DELHI

Letter of Association from Srinivas Varadarajan

Vigyanlabs™
Research + Innovation + IT + Consulting
www.vigyanlabs.com

January 25, 2010

Mr. Guru Malladi
Ernst & Young Private Limited,
Golf View Corporate Tower B,
Sector 42, Sector Road,
Gurgaon - 122 002, Haryana, India

Re: Consultancy services to UIDAI for setting up of Central ID data repository (CIDR) and selection of managed service provider (MSP) in response to RFP dated December 24, 2009 released by Unique Identification Authority of India (UIDAI)

Dear Mr. Malladi,

This is to confirm that I am willing to work as a sub - contractor in the consortium led by Ernst & Young Private Limited, organized for the purpose of submitting a proposal for the above captioned project.

I also confirm that I am not part of any other proposal, submitted to the Unique Identification Authority of India by another consortium or firm for the same or any other project.

I have read all the conditions laid out in the RFP document (Consultancy services to UIDAI for setting up of Central ID Data Repository (CIDR) and selection of Managed Service provider (MSP) dated December 24, 2009 released by the Unique Identification Authority of India (UIDAI)) related to conflict of interest and hereby confirm acceptance and shall ensure compliance to these conditions including the ones mentioned below:

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(ii) *Conflicting assignments. A Consultant (including its Personnel and Sub-Consultants) or any of its affiliates shall not be hired for any assignment that, by its nature, may be in conflict with another assignment of the Consultant to be executed for the same or for another Employer. For example, a Consultant hired to prepare Terms of Reference for an assignment should not be hired for the assignment in question.*

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Should the consortium led by Ernst & Young be awarded the assignment, I also confirm that I would be willing to work under the overall supervision of Ernst & Young for the duration of work assigned to me, and will not support or be part of any consortium/firm bidding for downstream work with the UIDAI.

I look forward to working together on this project.

Yours sincerely

V.Srin
Srinivas Varadarajan

Date: 8/01/2010
Place: Mysore

ERNST & YOUNG PVT. LTD.
NEW DELHI

Letter of Association from Prasad Srinivasachar

Vigyanlabs

Prasad Srinivasachar
Database Architect
Vigyanlabs Innovations Private Limited

January 17, 2010

Mr. Guru Malladi
Ernst & Young Private Limited,
Golf View Corporate Tower B,
Sector 42, Sector Road,
Gurgaon - 122 002, Haryana, India

Re: Consultancy services to UIDAI for setting up of Central ID data repository (CIDR) and selection of managed service provider (MSP) in response to RFP dated December 14, 2009 released by Unique Identification Authority of India (UIDAI)

Dear Mr. Malladi,

This is to confirm that I am willing to work as a sub - contractor in the consortium led by Ernst & Young Private Limited, organised for the purpose of submitting a proposal for the above captioned project.

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- *(i) A firm that has been engaged by the Employer to provide goods, works or services other than consulting services for a project, and any of its affiliates, shall be disqualified from providing consulting services related to those goods, works or services. Conversely, a firm hired to provide consulting services for the preparation or implementation of a project, and any of its affiliates, shall be disqualified from subsequently providing goods or works or services other than consulting services resulting from or directly related to the firm's consulting services for such preparation or implementation.*

Vigyanlabs

Prasad Srinivasachar
Database Architect
Vigyanlabs Innovations Private Limited

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Should the consortium led by Ernst & Young be awarded the assignment, I also confirm that I would be willing to work under the overall supervision of Ernst & Young for the duration of work assigned to me, and will not support or be part of any consortium/firm bidding for downstream work with the UIDAI.

I look forward to working together on this project.

Yours sincerely

Prasad Srinivasachar
Database Architect
Vigyanlabs Innovations Private Limited

Date: January 19th, 2010
Place: Bangalore

ERNST & YOUNG PVT. LTD. NEW DELHI

Letter of Association from Sanjeev Patil

Yashasvi Information Solutions Pvt. Ltd.
418, 17th Main, 10th Cross
2nd Phase, J.P.Nagar
Bangalore - 560 078 India
Tel : +91(80) 2649 2692
Fax : +91(80) 2658 4588
Web http://www.yashasvi.co.in

January 27, 2010

Mr. Guru Malladi
Ernst & Young Private Limited,
Golf View Corporate Tower B,
Sector 42, Sector Road,
Gurgaon - 122 002, Haryana, India

Re: Consultancy services to UIDAI for setting up of Central ID data repository (CIDR) and selection of managed service provider (MSP) in response to RFP dated December 14, 2009 released by Unique Identification Authority of India (UIDAI)

Dear Mr. Malladi,

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ERNST & YOUNG PVT. LTD.
NEW DELHI

YASHASVI

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Should the consortium led by Ernst & Young be awarded the assignment, I also confirm that I would be willing to work under the overall supervision of Ernst & Young for the duration of work assigned to me, and will not support or be part of any consortium/firm bidding for downstream work with the UIDAI.

I look forward to working together on this project.

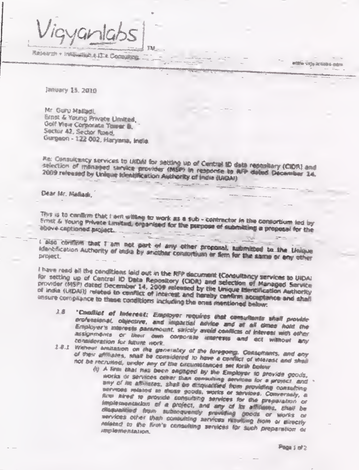
Yours sincerely

Sanjeev Patil

Date: 17 Jan 2010
Place: Bangalore

ERNST & YOUNG PVT. LTD. NEW DELHI

Letter of Association from Srivatsa Krishnaswamy



Vigyanlabs™
Research + Innovation + IT-e Consulting

www.vigyanlabs.com

January 15, 2010

Mr. Guru Malladi,
Ernst & Young Private Limited,
Golf View Corporate Tower B,
Sector 42, Sector Road,
Gurgaon - 122 002, Haryana, India

Re: Consultancy services to UIDAI for setting up of Central ID data repository (CIDR) and selection of managed service provider (MSP) in response to RFP dated December 14, 2009 released by Unique Identification Authority of India (UIDAI)

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Page 1 of 2

Vigyanlabs Innovations Private Limited SJCE-STEP JSS Technical Institution Campus Manasagangotri
Mysore-570 006 Tel +91-821-3042037 2413890 Fax +91-821-3042038

ERNST & YOUNG PVT. LTD. NEW DELHI

Vigyanlabs™
Research • Innovation • IT • Computing
www.vigyanlabs.com

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I look forward to working together on this project.

Yours sincerely

Srivatsa Krishnaswamy

Date: 15-1-2010
Place: Bangalore

ERNST & YOUNG PVT. LTD. * NEW DELHI *

Letter of Association from Dr. Anoop Namboodiri

Dr. Anoop M. Namboodiri
Assistant Professor

International Institute of Information Technology
Deemed University

January 15, 2010

Mr. Guru Malladi
Ernst & Young Private Limited,
Golf View Corporate Tower B,
Sector 42, Sector Road,
Gurgaon - 122 002, Haryana, India

Re: Consultancy services to UIDAI for setting up of Central ID data repository (CIDR) and selection of managed service provider (MSP) in response to RFP dated December 14, 2009 released by Unique Identification Authority of India (UIDAI)

Dear Mr. Malladi,

This is to confirm that I am willing to work as a sub - contractor in the consortium led by Ernst & Young Private Limited, organised for the purpose of submitting a proposal for the above captioned project.

I also confirm that I am not part of any other proposal, submitted to the Unique Identification Authority of India by another consortium or firm for the same or any other project.

I have read all the conditions laid out in the RFP document (Consultancy services to UIDAI for setting up of Central ID Data Repository (CIDR) and selection of Managed Service provider (MSP) dated December 14, 2009 released by the Unique Identification Authority of India (UIDAI)) related to conflict of interest and hereby confirm acceptance and shall ensure compliance to these conditions including the ones mentioned below:

1.8 *"Conflict of Interest: Employer requires that consultants shall provide professional, objective, and impartial advice and at all times hold the Employer's interests paramount, strictly avoid conflicts of interest with other assignments or their own corporate interests and act without any consideration for future work.*

1.8.1 *Without limitation on the generality of the foregoing, Consultants, and any of their affiliates, shall be considered to have a conflict of interest and shall not be recruited, under any of the circumstances set forth below:*

(i) *A firm that has been engaged by the Employer to provide goods, works or services other than consulting services for a project, and any of its affiliates, shall be disqualified from providing consulting services related to those goods, works or services. Conversely, a firm hired to provide consulting services for the preparation or implementation of a project, and any of its affiliates, shall be disqualified from subsequently providing goods or works or services other than consulting services*

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resulting from or directly related to the firm's consulting services for such preparation or implementation.

(ii) Conflicting assignments: A Consultant (including its Personnel and Sub-Consultants) or any of its affiliates shall not be hired for any assignment that, by its nature, may be in conflict with another assignment of the Consultant to be executed for the same or for another Employer. For example, a Consultant hired to prepare Terms of Reference for an assignment should not be hired for the assignment in question

(iii) Conflicting relationships: A Consultant (including its Personnel and Sub-Consultants) that has a business or family relationship with a member of the Employer's staff who is directly or indirectly involved in any part of (a) the preparation of the Terms of Reference of the Assignment/job, (b) the selection process for such Assignment/job, or (c) supervision of the Contract, may not be awarded a Contract, unless the conflict stemming from this relationship has been resolved in a manner acceptable to the Employer throughout the selection process and the execution of the Contract.

1.8.2 *Consultants have an obligation to disclose any situation of actual or potential conflict that impacts their capacity to serve the best interest of their Employer, or that may reasonably be perceived as having this effect. Failure to disclose said situations may lead to the disqualification of the Consultant or the termination of its Contract.*

1.8.3 *No agency or current employees of the Employer shall work as Consultants under their own ministries, departments or agencies.*

Should the consortium led by Ernst & Young be awarded the assignment, I also confirm that I would be willing to work under the overall supervision of Ernst & Young for the duration of work assigned to me, and will not support or be part of any consortium/firm bidding for downstream work with the UIDAI.

I look forward to working together on this project.

Yours sincerely

Anoop M Namboodiri

Date: 13/01/2010
Place: Hyderabad

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Company Name

Information from External Sources

Company Snapshot : Pfleiderer AG

Snapshot | News | Filings | Analyst reports | Deals | Directors and board profiles | Shareholders | Credit reports

OneSource business description

Pfleiderer AG is a Germany-based producer and supplier of engineered wood products. It acts as a partner for wood trade outlets, interior designers, the building and do-it-yourself trade, and the furniture industry in more than 80 countries worldwide. The Company offers a range of base products, such as raw chipboard and particleboard, tongue and groove board, medium-density fiberboard and high- density fiberboard, and surfaced products, such as melamine-faced chipboard, high-pressure laminates and post-forming elements, laminate flooring and a range of films and surfacings. The Company operates through three geographical segments: Western Europe, including Germany and Sweden, Eastern Europe, consisting of Poland and Russia, and North America, composed of Canada and the United States. For the nine months ended 30 September 2009, Pfleiderer AG's total revenue decreased 23% to EUR1.04B. Net loss for the period from continuing operations totaled EUR24.1M, vs. a profit of EUR16.4M. Total revenue reflects unfavourable market conditions as well as a decrease in demand for the Company's products and services in Western and Eastern Europe. Net loss for the period from continuing operations reflects decreased operating margins

Company daily share price - last two years. (Source: EDGAR Online)

Pfleiderer AG
Ingolstaedter Strasse 51
Neumarkt, Germany
92318
Tel: 49-9181-280
FAX: 49-9181-28606
Company website

Primary Symbols & Exchange
PFD4 XETRA

Global Industry Code Description:
Building Products

Number of Employees: 5,636

Source: OneSource

Market Cap: 382 ($mil)
Revenue: 2,374 ($mil)
P/E Ratio: 23 ($mil)

Source: Reuters Fundamentals

DUNS number: 341537504

Source: D&B

Company Profiles
Company Profile (Source: Thomson Reuters)
Datamonitor Company Profile (Source: Datamonitor)
Company Overview & History (Source: Hoovers)
Company Summary (Source: OneSource)

Company Information
Brokers Estimate Consensus Report (Source: Reuters Estimates)
Advisers (Source: OneSource)
Sustainability Reports (Source: Perfect Information)
Global Corporate Family Tree (Source: D&B)
Competitor Information (Source: Hoovers)
Industry Survey - no results found.

Company Financial Analysis
OneStop Report (Source: OneSource)
Financial Report (Source: OneSource)
Business Segment Data - no results found.
Ratio Comparisons Table - no results found.
Company Financials - no results found.

Share Performance
Share performance (Source: Dow Jones Factiva)

Data as of: Mar 12 2010

Peer Analysis (Source: Thomson Reuters)

Company	Sales	EBITDA	EBIT	Net Income	Market cap	Total Assets	Total Liabilities
WEYERHAEUSER COMPANY	$5,528.0	$88.0	$-420.0	$-545.0	$9,232.2	$14,951.0	$10,897.0
PFLEIDERER AG	$2,417.7	$264.1	$104.0	$8.1	$386.9	$2,457.3	$1,829.5
WESTAG & GETALIT AG	$315.0	$33.9	$21.3	$15.0	$114.5	$189.6	$60.6
SUNCHANG CORPORATION	$240.0	$14.5	$2.7	$-3.4	$58.6	$323.8	$164.2
PACIFIC PLYWOOD HOLDINGS LIMITED	$95.1	$-2.8	$-9.8	$-36.6	$65.0	$86.5	$86.5
SAVA BERHAD	$40.0	$1.6	$-2.7	$ 3.2	$34.6	$83.3	$19.4
MANGALAM TIMBER PRODUCTS LIMITED	$13.8	$1.6	$1.4	$.3	$10.2	$16.6	$12.3
INNOPRISE PLANTATIONS BERHAD	$11.5	$3.5	$3.5	$2.4	$14.6	$20.8	$3.5

Source: Worldscope
Data as of latest filings

ERNST & YOUNG PVT. LTD. NEW DELHI